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The Trade, Biology, and Management of American Ginseng *Panax quinquefolius*

TRAFFIC (U.S.A.)
WORLD WILDLIFE FUND-U.S.

The Trade, Biology, and Management of American Ginseng *Panax quinquefolius*

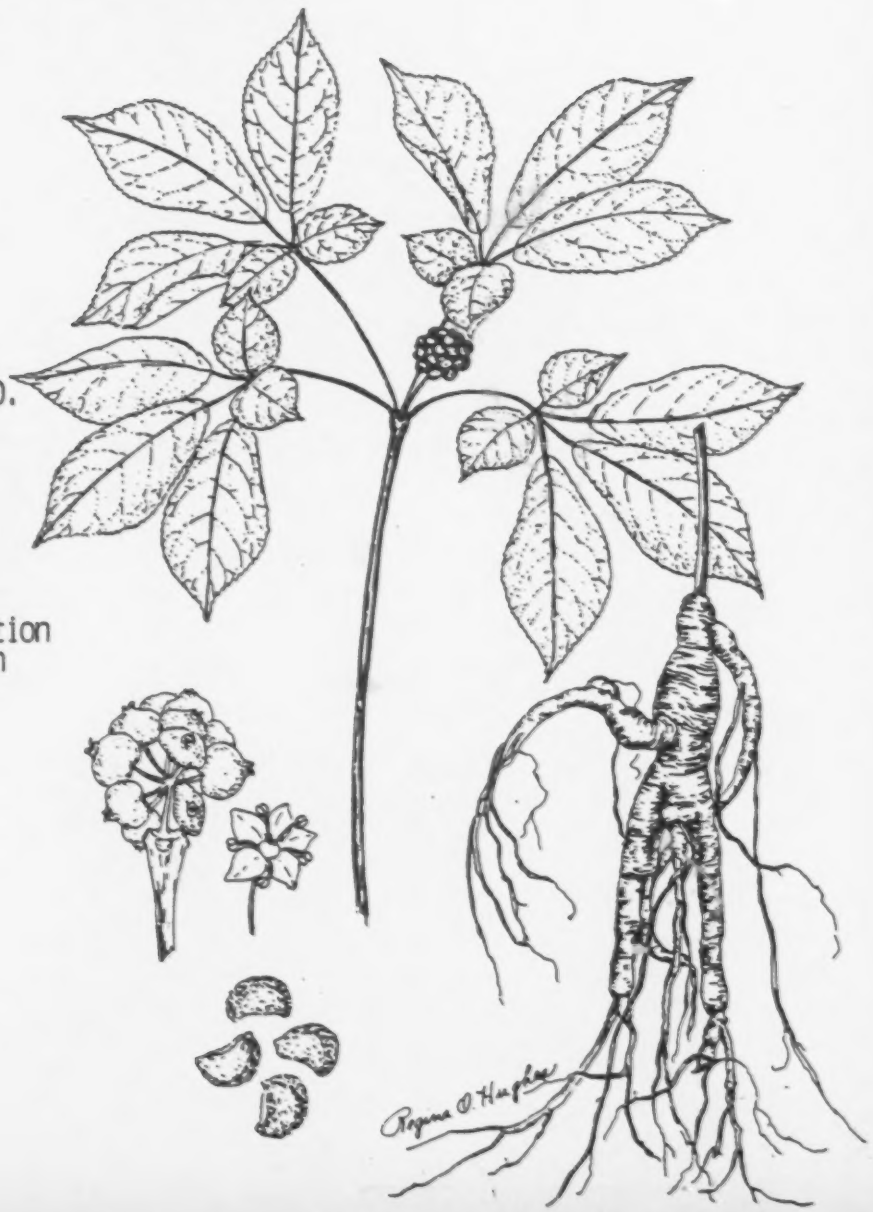
Prepared by

Linda McMahan, Ph.D.
Staff Botanist

Staff Report

International Convention
Advisory Commission

1981



TRAFFIC (U.S.A.)

WORLD WILDLIFE FUND-U.S.

1601 Connecticut Avenue NW
Washington, DC 20009

(202) 797-7901

April 29, 1982

Dear Reader:

TRAFFIC(U.S.A.) is pleased to publish this staff report of the U.S. International Convention Advisory Commission prepared in September 1981 and updated by the TRAFFIC staff to reflect recent decisions by the U.S. government. The text and tables remain largely unchanged but we have added a short summary table of the information from each state on status, legal authority, conservation and management of American ginseng. We have also added the most recent Federal Register notices for 1980/81 export approval and 1981/82 procedures.

Although this report was largely completed in September 1981, the end of funding for the Commission precluded its publication. TRAFFIC(U.S.A.) subsequently agreed to publish the report for the Commission.

Sincerely,

Linda McMahan, Ph.D.
Acting Director

TRAFFIC(U.S.A.)—Trade Records Analysis of Flora and Fauna in Commerce—is a program of World Wildlife Fund-U.S. and a Specialist Group of the Species Survival Commission of the International Union for Conservation of Nature and Natural Resources. It monitors the international trade in wild animals and plants.
Cable: PANDAFUND Telex: 64505

United States
INTERNATIONAL CONVENTION ADVISORY COMMISSION
1010 Wisconsin Avenue, NW., Suite 210
Washington, D.C. 20007

October 20, 1981

Dear Colleague:

The International Convention Advisory Commission is pleased to send you our staff report, The Biology and Management of American Ginseng, Panax quinquefolius. The reports was prepared by Dr. Linda McMahan, staff botanist for the Commission.

Due to budget cuts in the Office of the Secretary, Department of Interior, the funding for the Commission staff has been terminated, effective September 30, 1981. Therefore, please address any inquiries concerning this report or other matters involving the Commission to me at:

Mr. Tom McIntyre, Chairman
International Convention Advisory Commission
c/o Animal and Plant Health Inspection Service
United States Department of Agriculture
Federal Building
Hyattsville, Maryland 20782

Sincerely,

T. McIntyre

Tom McIntyre
Chairman

Enclosure

Introduction

American ginseng, Panax quinquefolius, has perhaps gained more attention than any other plant listed on the appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This attention is due to the large volume of American ginseng in trade, its purported medicinal value, and complex and controversial management of wild American ginseng by federal and state governments.

Botanists traditionally have considered wild American ginseng as "rare," yet wild populations have consistently supported trade since the 1700's. The interest in American ginseng has also led to increased efforts to cultivate the species, although collected wild specimens remain the most prized in international commerce.

Since listing of the American ginseng on CITES Appendix II in 1975, the United States Fish and Wildlife Service and the former Endangered Species Scientific Authority have gathered information about this plant species. The staff of the International Convention Advisory Commission is grateful to the Office of the Scientific Authority and to the Federal Wildlife Permit Office for providing much of the information for this report. To supplement data and materials from the files of the Fish and Wildlife Service, the Commission staff has also used other published and unpublished sources.

This report consists of several parts. The first part summarizes very briefly the available literature on American ginseng, particularly data on trends in price and volume in trade. Appendix A includes state-by-state summaries of laws, management programs, and biological research data for states where wild American ginseng occurs. Appendix B is a compendium of Federal Register notices on American ginseng. The texts for the Federal Register notices are reproduced first, followed by composite export findings for each state.

This report necessarily is brief because funding for the Commission staff ends on September 30, 1981. Where possible, the reader is referred to other published reports that summarize one or more areas of ginseng biology or management.

What is American Ginseng?

American ginseng, Panax quinquefolium, is a species of the plant family Araliaceae, commonly known as the "ginseng family." It is a perennial herb, one of two native species of the genus Panax. The other native species is Panax trifolius, dwarf ginseng, a plant standing only four to eight inches high and having a small globular root. American ginseng is only one of approximately 800 species of the Araliaceae. Other well-known members of this family include Chinese ginseng (Panax ginseng), English ivy (Hedera helix), Fatsia japonica (a common houseplant), and Tetrapanax papyrifera (the source of rice paper). More information about ginseng relatives is provided by Hutchinson (1967), Lawrence (1951), and Heywood (1978).

Gray's Manual of Botany (Fernald, 1950) contains a typical description of American ginseng. Panax quinquefolius, commonly called "sang" or "ginseng," is a long-stemmed herb with palmately compound leaves. Each leaf is composed of up to five leaflets, thus accounting for the species name "quinquefolius," literally meaning five-leaved. "Panax," the genus name, derived from Greek words meaning "all healing." The roots are large, spindle-shaped, often forked. The small white flowers occur in a simple cluster. The fruits or berries, also occurring in a cluster, mature to a bright red.

For information on the results of biological research programs in individual states, see the summaries in Appendix A.

History of American Ginseng in North America

A detailed account of the discovery and early history of American ginseng may be found in Bizarre Plants, a book by William Emboden (1974). According to Emboden, American ginseng was discovered in Canada in the early 1700's. At the time, this discovery caused considerable excitement because of the possible relationship of the newly discovered plant to Chinese ginseng, a plant already widely known for its medicinal properties. Closely following the discovery in Canada, the plant was also found in most states east of the Mississippi River in what was later to become the United States of America. Thus began the export business of wild American ginseng.

According to Emboden and other sources, collecting pressure was so heavy that wild American ginseng became rare in many localities. In the late nineteenth century, Canada enacted laws to control harvest of wild American ginseng (Emboden, 1974). Around the same time, botany manuals began to report the plant as rare. The plant is "yearly becoming more scarce," according to Dana (1893). "The plant has become rare," is the statement found in Britton and Brown (1913). Mathews (1927) lists the plant as "rare in rich cold woods."

By about 1900, heavy collecting pressure and clearing of forests in the eastern United States had severely altered the native populations of what was, at one time, a common species. In response to the growing scarcity of wild American ginseng, a New York farmer, George Stanton, started the first commercial effort at growing American ginseng in the late nineteenth century. (Emboden, 1974). As a result of this and other cultivation efforts, most current ginseng exports from the United States are derived from cultivated plants. However, a substantial market still remains for wild ginseng.

Although many States, such as Connecticut and Maine, still report wild American ginseng as rare, many other States, particularly the Appalachian states, appear to have substantial quantities of wild ginseng. Regrowth of many of the forests in eastern North American has led to recurrence of ginseng habitat that was lost in the nineteenth century. The recent listing of American ginseng on CITES has led to increased efforts by the federal and state governments to assess the biology and abundance of this plant, a process that has already yielded much information and will continue to yield more as the state research programs progress.

Medicinal Properties of American Ginseng

Partly because some ginseng roots resemble the human body, the Oriental peoples have prized the roots as a "cure-all" (Staba and Chen, 1979). The long list of ailments that ginseng supposedly can aid include hangovers, digestive problems, asthma, problems from childbirth, cough, hemorrhages, and fevers (Dixon, 1976). Krochmal and Krochmal (1973) state that the plant has also been used as a general tonic, as an aphrodisiac, and to treat

convulsions and nervous disorders, among similar ills. With such widely acclaimed properties, it is not surprising that some authors dispute these claims. Baker (1970), for example, in a recent book Plants and Civilization states "The real utility of ginseng as a drug is subject to some doubt, based as it is upon the supposed resemblance of the ginseng root to the human figure."

Despite controversy over its efficacy, there is some evidence of medicinal value. American ginseng, as well other members of the genus Panax contain biologically active chemicals known as saponins. According to Huxley (1974), a Japanese company has built a factory to produce saponins (plant biochemicals that can be used to make human hormones and analogues) using ginseng tissue culture. Staba and Chen (1979), and Kim and Staba (1974) recently reviewed the chemistry of ginseng saponins. For a general discussion of ginseng as it is used in Chinese medicine, see Hu (1977).

Distribution of Wild American Ginseng

Wild American ginseng has been reported from 34 states in the United States and in several provinces in eastern Canada. Figure 1 is a map showing the counties where wild ginseng has been reported. This map is incomplete in that it relies primarily on data in Fish and Wildlife Service files, and does not necessarily incorporate all of the published literature on American ginseng distribution. The data also vary widely in reliability. Many reports are from herbarium specimens on file in various herbaria in the United States. Other reports come from personal observations and collectors' reports. Figure 2 is a similar map for reports of ginseng occurrence since 1970. Although the map shows no recent reports from several states (New Hampshire, for example), this does not mean that wild ginseng no longer occurs there, but merely that no reports of recent ginseng occurrence were available to the Commission staff. Sources for these maps are listed separately in the reference section.

Figure 3 is an outline map of the probable historical distribution of wild American ginseng. The shaded portion of the map is the distribution estimated by Nash (1896). The outer dark line is the estimated distribution based on

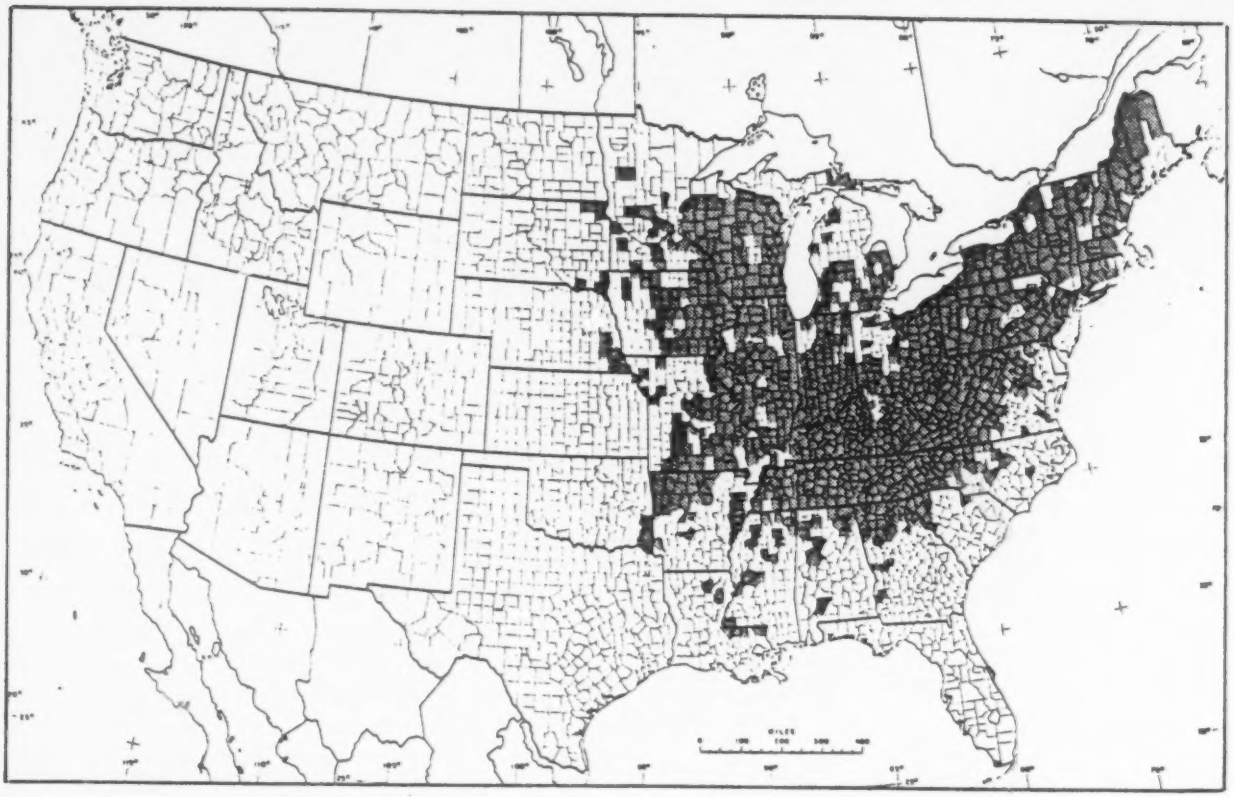


Figure 1. Historical distribution of wild American ginseng by counties.

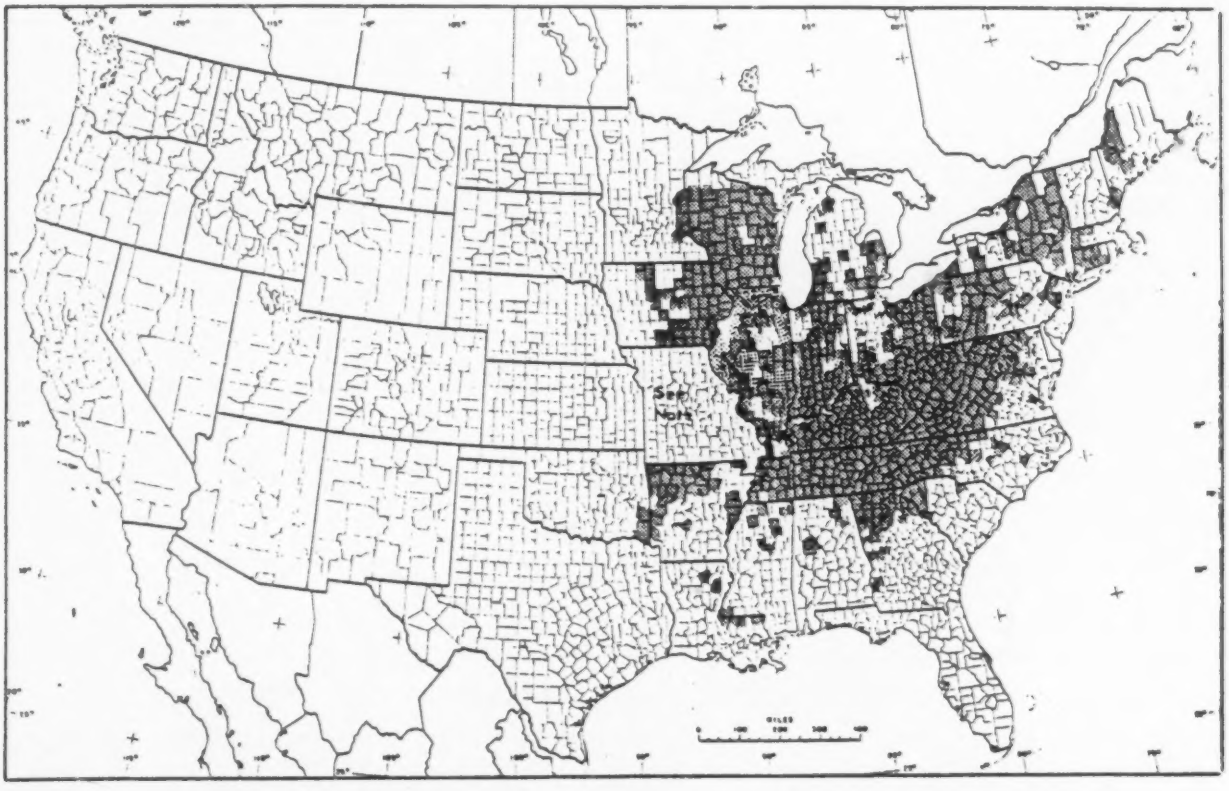


Figure 2. Peported distribution of wild American ginseng since 1970 by counties. Missouri has populations in many counties but these have not recently been verified.

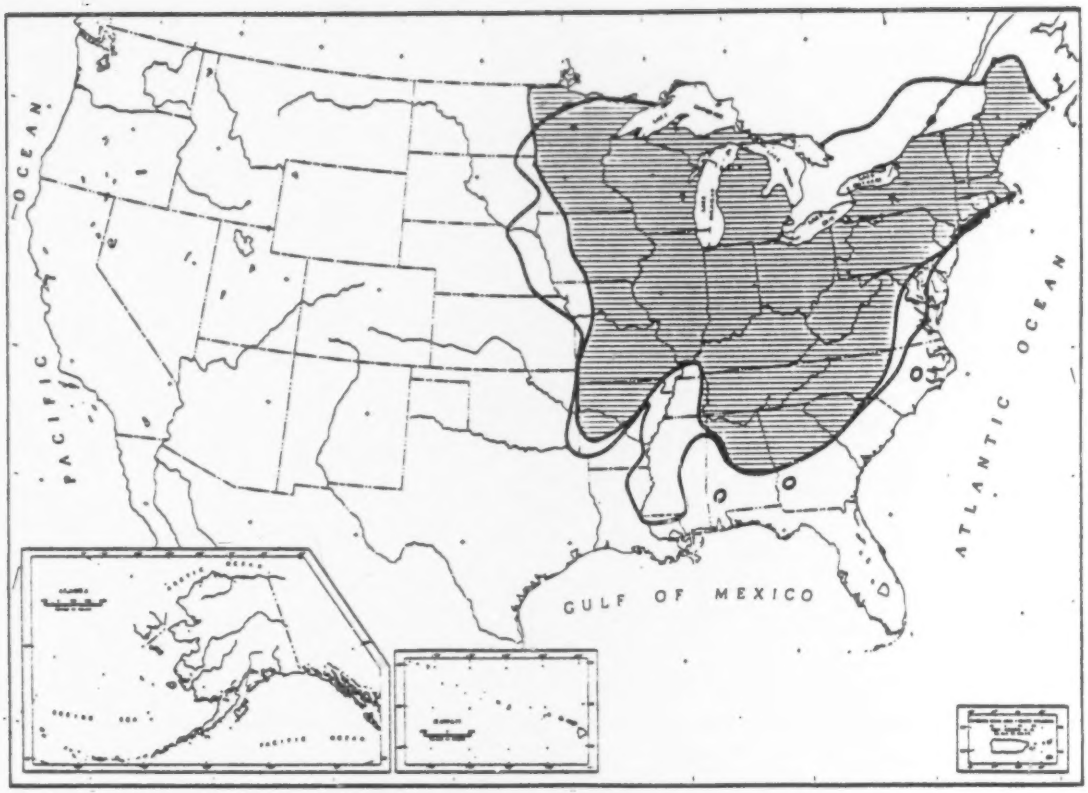


Figure 3. Probable historical distribution of wild American ginseng. Shaded portion is from Nash (1896). The solid black line is based on distribution in Figure 1.

county-by-county reported distributions from Figure 1. The probable Canadian distribution is based on data supplied by David White of the Rare and Endangered Plants Project at the Canadian Museum of Natural Sciences. Figure 4 shows the probable historic distribution of wild American ginseng compared to the major geographic provinces of North America. Note that ginseng distribution substantially overlaps the distribution of the eastern deciduous forest. In the other geographic provinces, American ginseng usually occurs in forested areas along river valleys or in wooded areas.

FWS Findings for Export of Wild American Ginseng

Appendix B of this report is a collection of Federal Register notices on state-by-state export findings for wild American ginseng. The relevant portions of notices from 1977 through April 1982 are reproduced there. These notices contain additional background information on the status of wild American ginseng. Figure 5 shows all states where wild ginseng has occurred

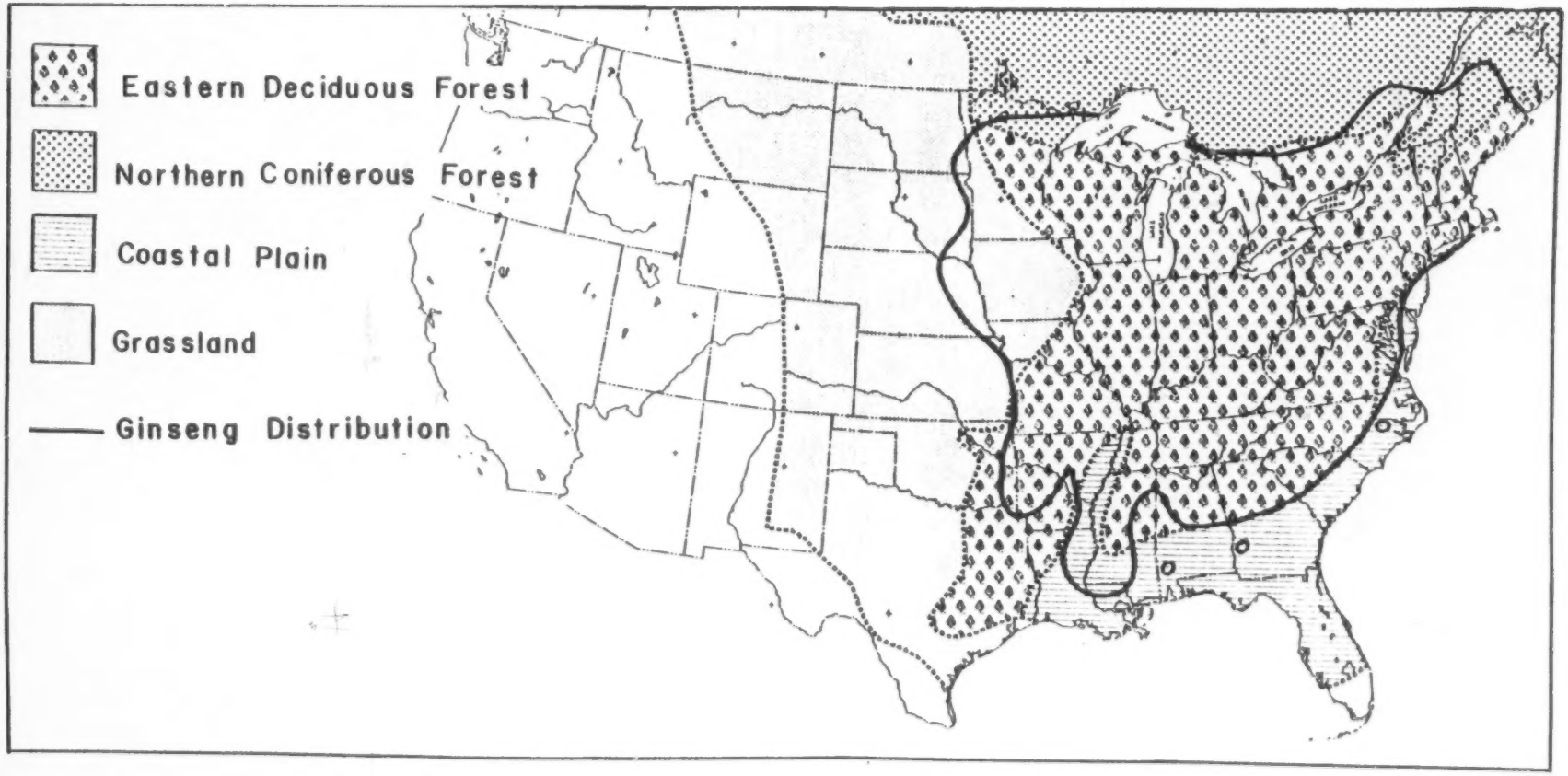


Figure 4. Probable historical distribution of wild American ginseng compared with the geographic provinces of North America. Geographic provinces based on Gleason and Cronquist (1964).

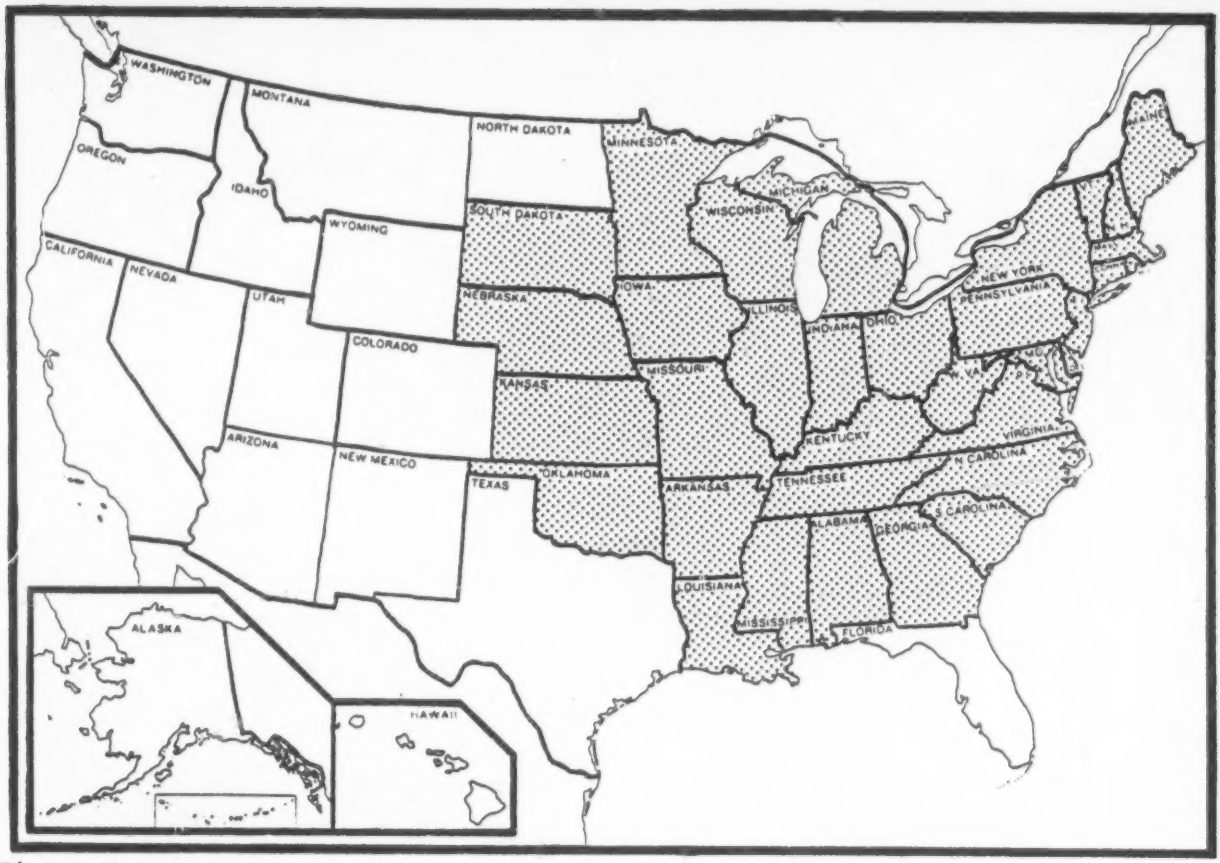


Figure 5. States where wild American ginseng has occurred historically.

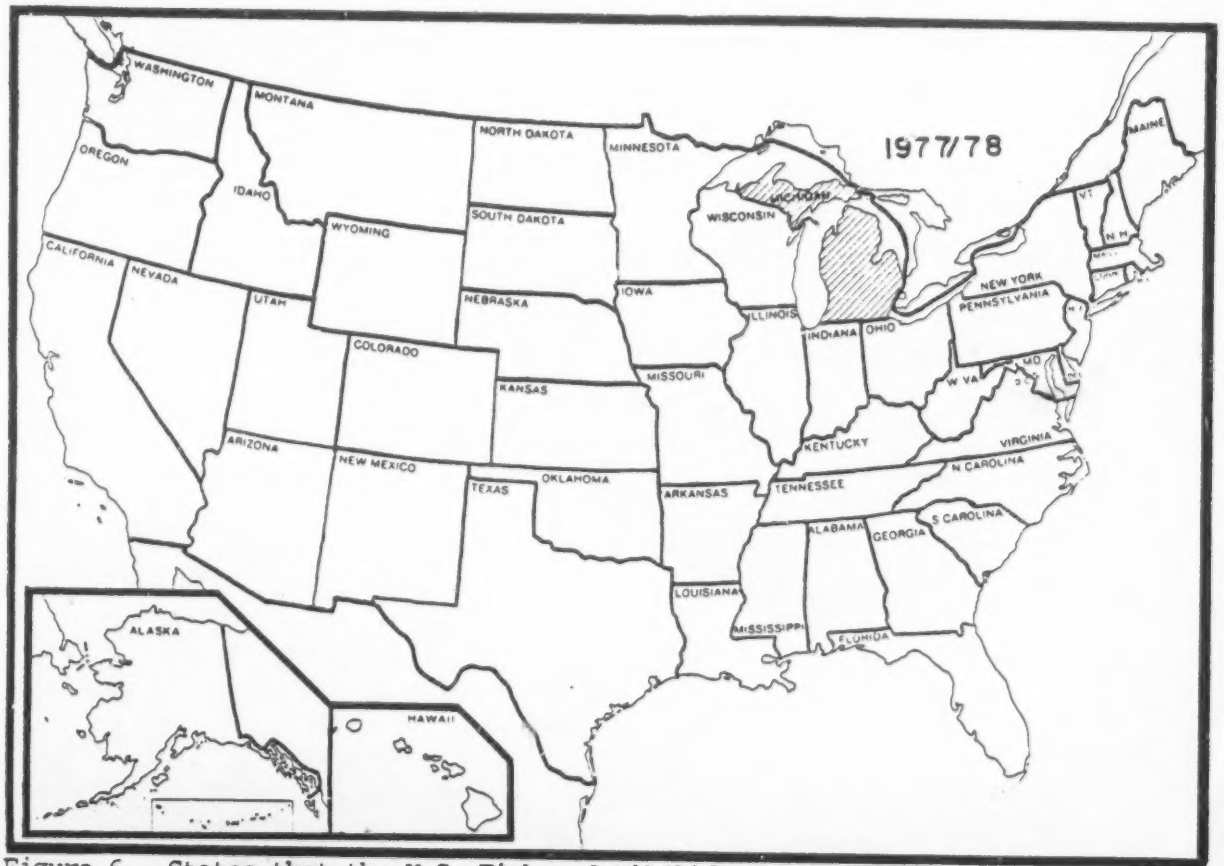


Figure 6. States that the U.S. Fish and Wildlife Service approved for export of wild American ginseng, 1977/78

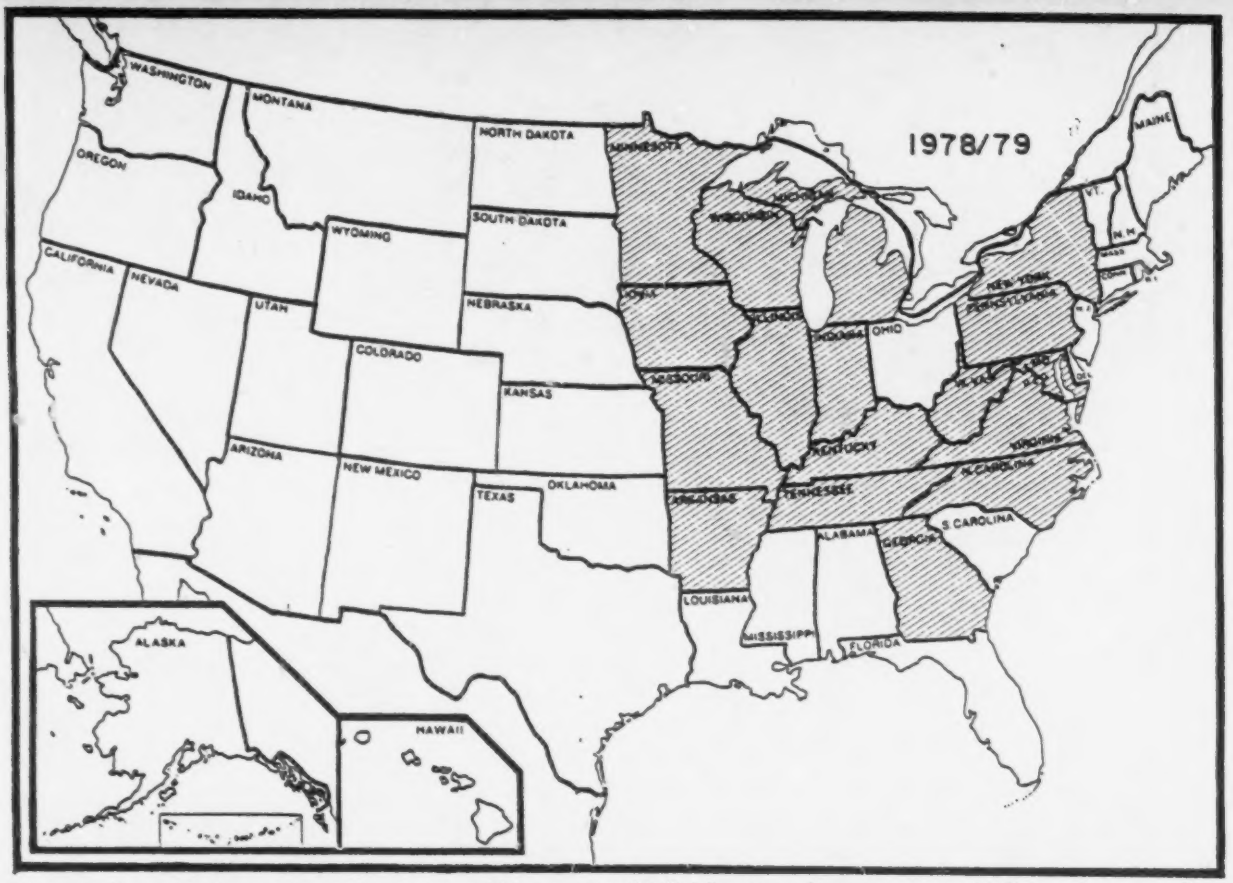


Figure 7. States that the U.S. Fish and Wildlife Service approved for export of wild American ginseng, 1978/79.

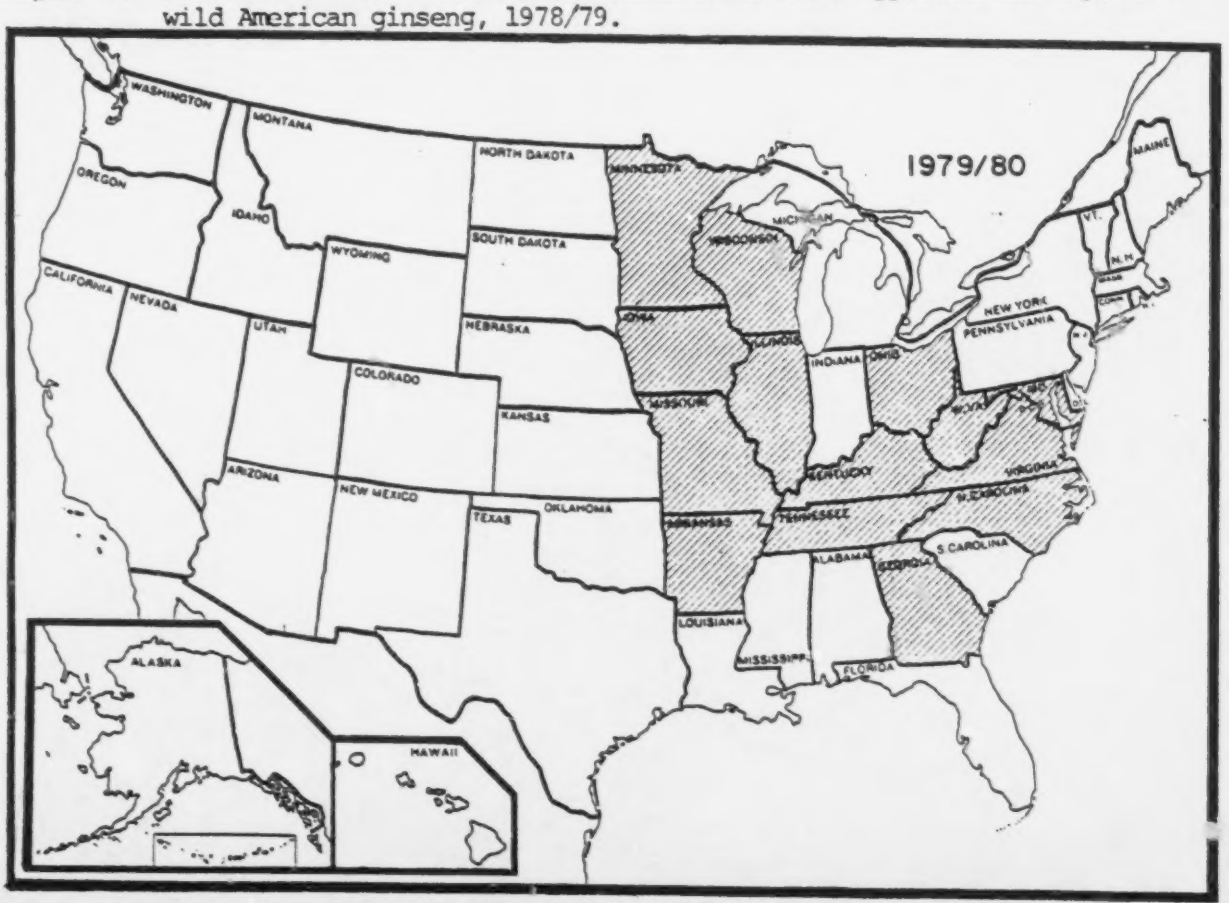


Figure 8. States that the U.S. Fish and Wildlife Service approved for export of wild American ginseng, 1979/80

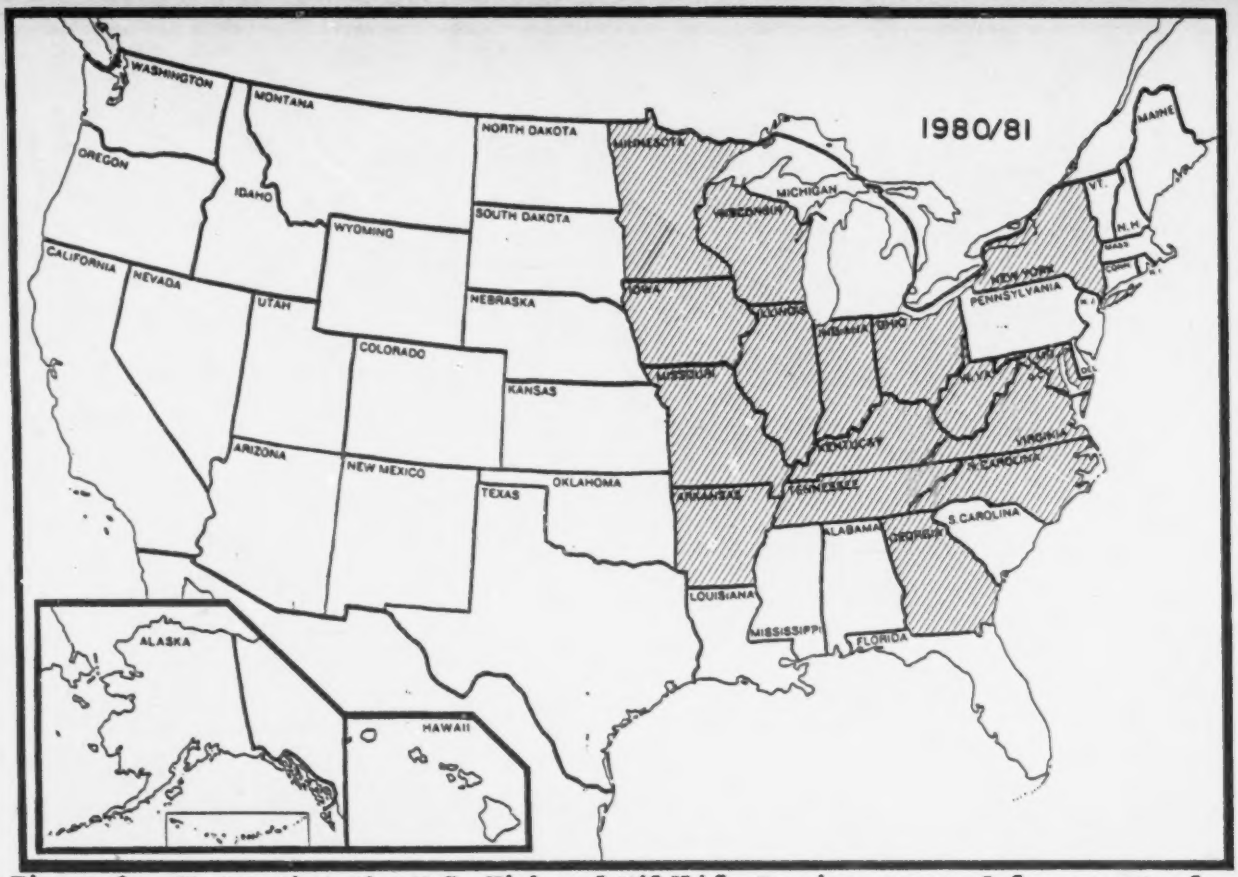


Figure 9. States that the U.S. Fish and Wildlife Service approved for export of wild American ginseng, 1980/81.

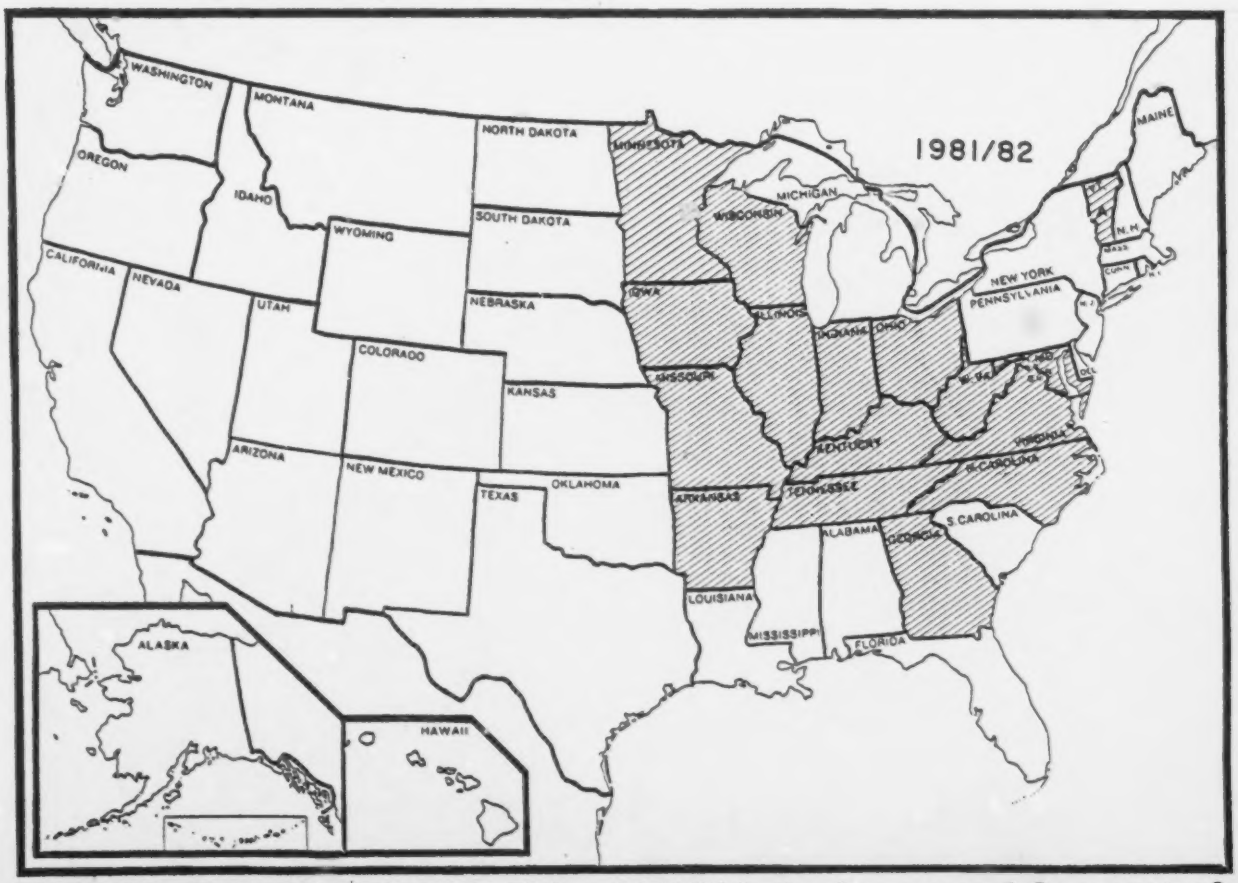


Figure 10. States that the U.S. Fish and Wildlife Service approved for export of wild American ginseng, 1981/82. Vermont approved only for artificially propagated ginseng.

historically. Figures 6 through 10 depict those states where export has been approved for the 1977/78 through the 1980/81 season.

Export Figures for American Ginseng

Figures 11 through 13 show export figures for wild and cultivated American ginseng in metric tons. Data used to derive these figures are explained with each figure.

Figure 11 includes reports of exports from 1820 to 1980. Note that data are not present for all years. The trends, however, seem clear. Export was heavy (generally above 100 metric tons per year) up to the late nineteenth century. From 1900 until 1960, exports generally were less than 100 metric tons per year. Starting in 1960, exports again began to rise; in 1980, nearly 300 metric tons of ginseng were reported as exports from the United States.

Before 1900, nearly all of the ginseng exported was wild. It is unclear how much wild versus cultivated ginseng was exported from 1900 until the 1970's. In the last several years, most of the ginseng exported has been cultivated. Estimates based on data from the Permit Office of the Fish and Wildlife Service are that approximately 70% of ginseng exported was cultivated. Table 1 shows the background data for this estimate. Figure 12 is a graph of cultivated and wild American ginseng exported in the 1979/80 and 1980/81 seasons. Only preliminary data are available for the 1980/81 harvest season.

Table 1.
Metric tons of Cultivated and Wild American Ginseng Reported as Exports
(data from U.S. Fish and Wildlife Service)

Category	Cultivated (% of Total)	Wild (% of Total)	Total
Calendar Year 1980	143 (68%)	68 (32%)	211
Harvest Season 1979/80	107 (73%)	39 (27%)	146
Harvest Season 1980/81 (partial)	103 (70%)	45 (30%)	148

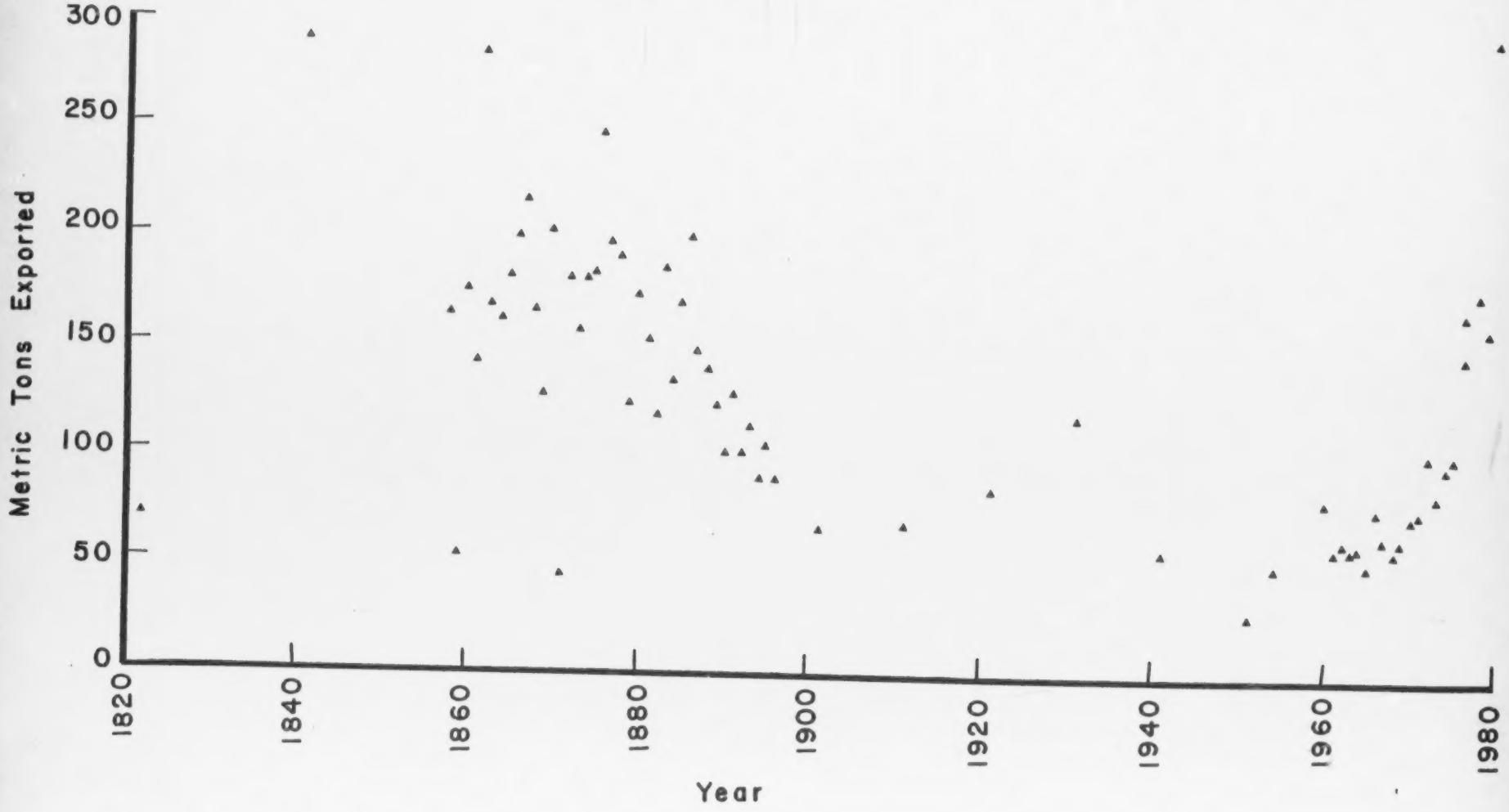


Figure 11. Metric tons of American ginseng exported, 1820 - 1980. Data from 1822 to 1960 from Hardacre (1968). Data for 1954 and 1961 - 1975 are from the 1977 Federal Register notice (see Appendix B). Data from 1975 - 1980 are from U.S.D.A. Foreign Agricultural Circulars (see References).

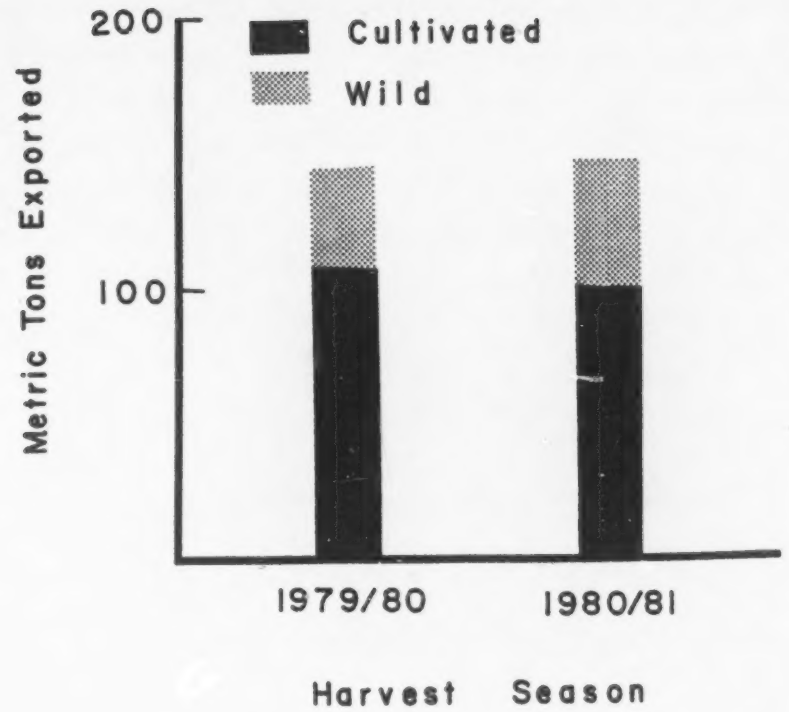


Figure 12. Metric tons exported of wild and cultivated American ginseng for the 1979/80 and 1980/81 harvest seasons. See Table 1 for figures.

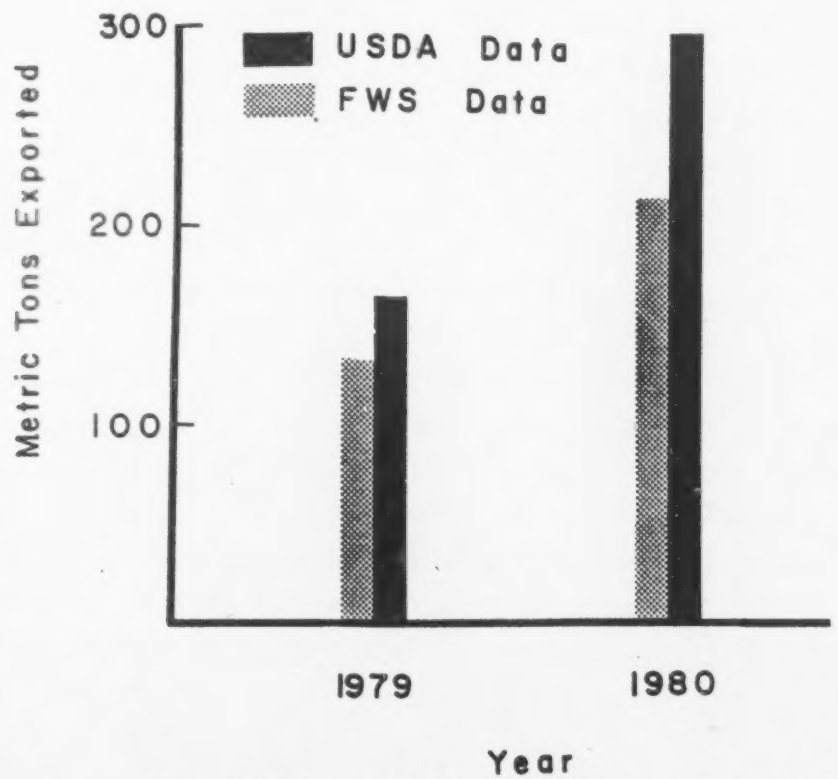


Figure 13. U.S. Fish and Wildlife Service data for exports of American ginseng compared to U.S.D.A. data. See text for figures.

Figure 13 compares export data of the U.S. Fish and Wildlife Service to that reported by the U.S. Department of Agriculture. Note that for both years of dual reports, fewer exports are reported by the U.S. Fish and Wildlife Service. For example, in 1980 the U.S. Fish and Wildlife Service reported the export of 211 metric tons while U.S.D.A. figures showed 293 metric tons, a 28% discrepancy. The figures for 1979 are 132 metric tons (FWS) and 161 metric tons (U.S.D.A.), an 18 % discrepancy.

Price Trends of American Ginseng Exports

Figures 14 through 17 show data on price of American ginseng exported. Figure 14 shows the trend in prices from 1820 to 1980. Data are not present for all years. Solid circles are the reported prices in U.S. dollars per kilogram of ginseng exported. Hollow circles are the reported prices corrected for inflation, showing that the real increase in prices from about 1930 to 1980 is not nearly so high as reported prices imply. Figure 15 shows the same data, reported each five or ten years from 1860 to 1980 to produce a smoother curve. As in the previous figure, when prices are corrected for inflation only a slight rise in prices is apparent from 1930 to 1980. Figure 16 shows yearly data on prices from 1970 to 1980, showing an approximately constant price for ginseng when accounting for inflation. Figure 17 compares two twenty-year periods, 1860-1880 and 1960-1980, for price fluctuation relative to the base years 1860 and 1960. There was considerable year-to-year variation in prices for both periods. From 1960 to 1980, the percentage increase in reported dollars was dramatic. However, when the figures are adjusted for inflation the percentage rise again is much less dramatic.

For all of these figures, cultivated and wild ginseng prices were considered together. This approach somewhat biases the data since wild American ginseng will bring a much higher price than cultivated American ginseng. The Commission staff has no firm estimates of the price of wild American ginseng. Several states report current values of up to $120.00 per pound; however, the staff has heard uncomfirmed reports of prices over $200.00 per pound for wild ginseng from some localities. Because of the lack of firm data, price analyses of wild versus cultivated ginseng are not presented in this report.

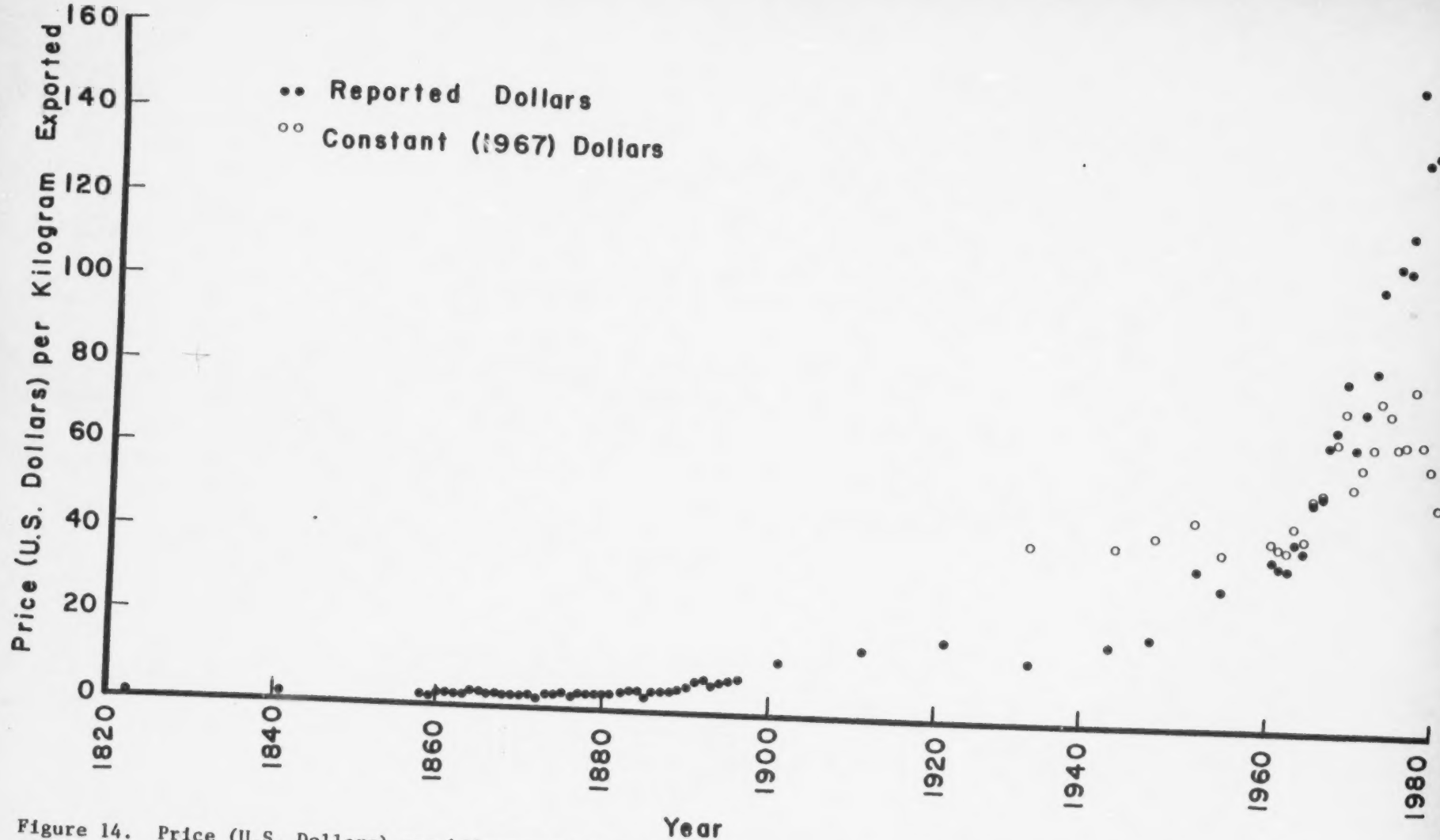


Figure 14. Price (U.S. Dollars) per kilogram of American ginseng exported, 1820 - 1980. Data are from the same sources as in Figure 11. Constant dollars were computed by using the Consumer Price Index in the 1980 Economic Report to the President.

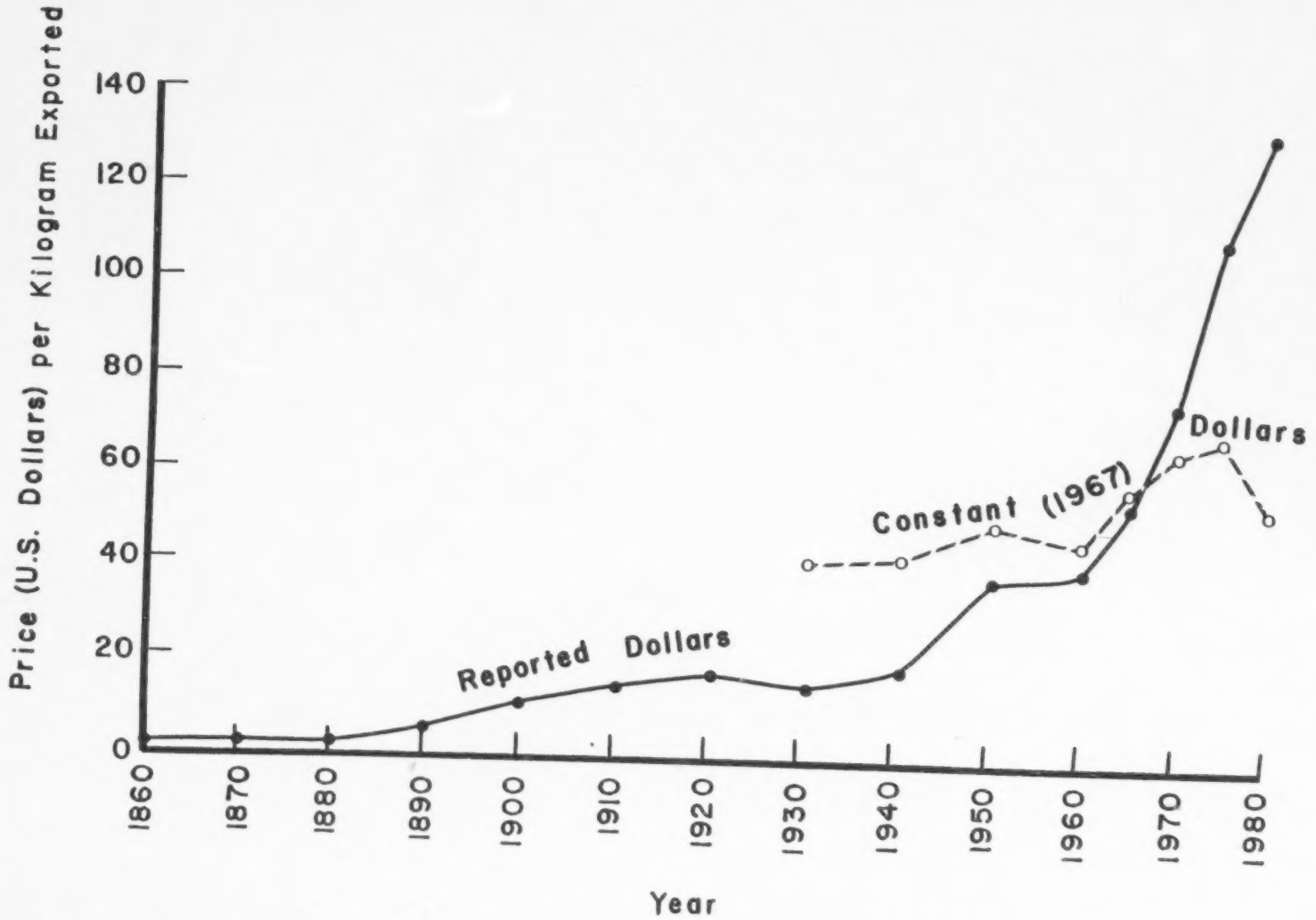


Figure 15. Trends in price (U.S. dollars) per kilogram of American ginseng exported, 1860 - 1980. Price is plotted for approximately each ten years from 1860 to 1960 and for each five years from 1960 to 1980.

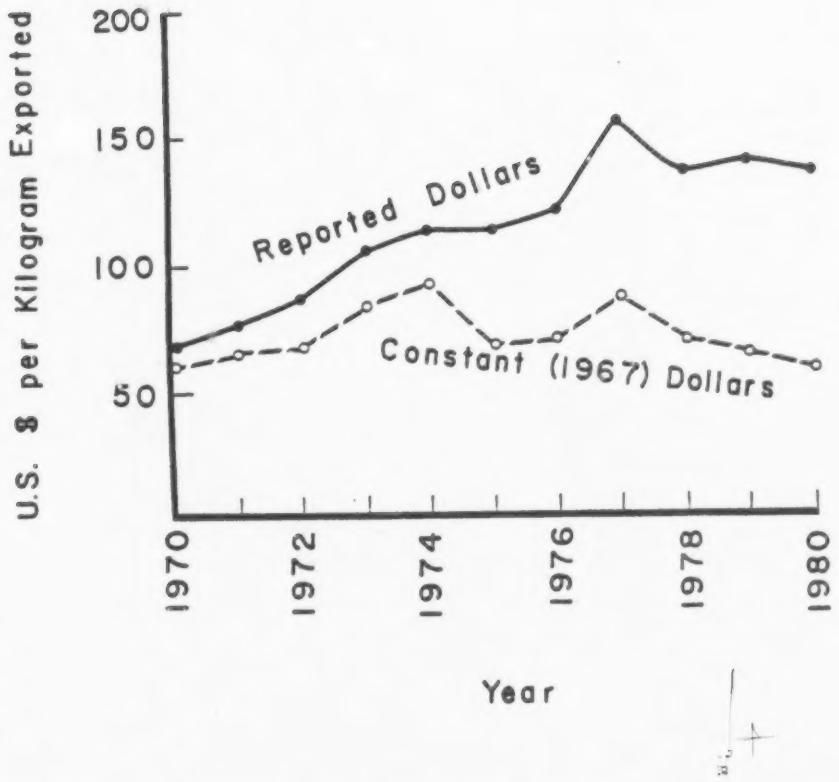


Figure 16. Price (U.S. dollars) per kilogram of American ginseng exported, 1970 - 1980.

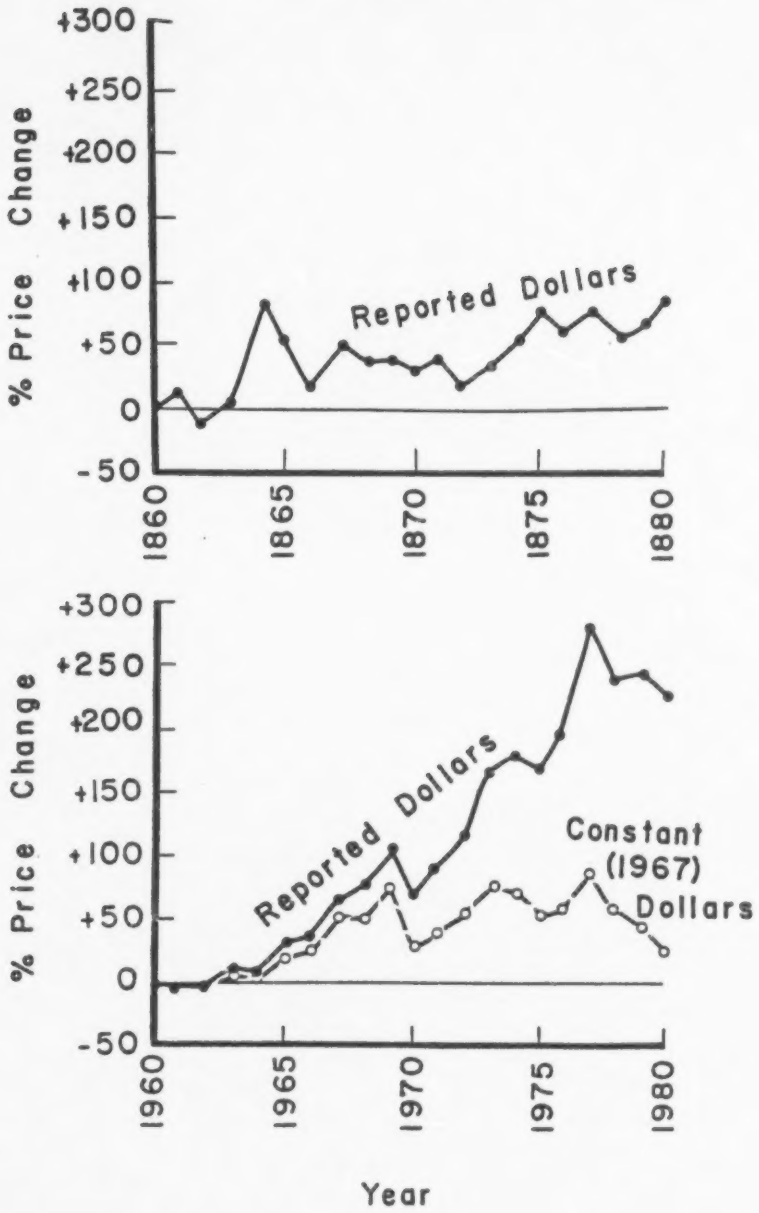


Figure 17. Percentage price change for exported American ginseng over two twenty-year periods, 1860-1880 and 1960-1980. Percent price change computed from 1860 or from 1960.

Conclusion

The Commission staff presents these data with the hope that you will find the report a useful summary of some of the information on file with the U.S. Fish and Wildlife Service. For more information, please contact:

Dr. Richard Jachowski, Chief
Office of the Scientific Authority
U.S. Fish and Wildlife Service
Department of Interior
18th & C Streets, N.W.
Washington, D.C. 20240
(202) 653-5948

or

Mr. Richard Parsons, Chief
Federal Wildlife Permit Office
U.S. Fish and Wildlife Service
Department of Interior
18th & C Streets, N.W.
Washington, D.C. 20240
(703) 235-1937

General References

Baker, Herbert G., 1970. Plants and Civilization, Second Edition, Wadsworth Publishing Company, Inc., Belmont, California.

Britton, Nathaniel Lord and Addison Brown, 1913. An Illustrated Flora of the Northern United States and Canada, Volume II, Dover Publications, New York (1970 republication).

Dana, Mrs. William Starr, 1893. How to Know the Wild Flowers, Dover Publications, New York (1963 republication).

Dixon, Pamela, 1976. Ginseng, Gerald Duckworth & Co., Ltd., London.

1980. Economic Report to the President, Coucil of Economic Advisors.

Emboden, William A. 1974. Bizarre Plants, Magical, Monstrous, Mythical, Macmillan Publishing Co., Inc., New York, New York.

Fernald, Merritt L., 1950. Gray's Manual of Botany, 8th Edition, American Book Company, New York.

Gleason, H. A. and A. Cronquist, 1964. The Natural Geography of Plants, Columbia University Press, New York.

Hardacre, V. 1968. Woodland Nuggets of Gold, the Story of American Ginseng Cultivation, Vantage Press, New York.

Heywood, V.H. (Ed.), 1978. Flowering Plants of the World, Mayflower Books, New York, New York.

Hu, S-Y., 1977. A Contribution to Our Knowledge of Ginseng. American Journal of Chinese Medicine, 5:1-23.

Hutchinson, J., 1967. The Genera of Flowering Plants (Angiospermae). Dicotolydones, Volume II, Oxford University Press, Ely House, London.

Huxley, Anthony, 1974. Plant and Planet, The Viking Press, New York.

Kim, Jung Yun and E. John Staba, 1974. Biochemistry of Ginseng Constituents and Plant Triterpenes, Korean Journal of Pharmacognosy, 5:85-101.

Krochmal, Arnold and Connie Krochmal, 1973. A Guide to the Medicinal Plants of the United States, Quadrangle/The New York Times Book Co., New York.

Lawrence, George H., 1951. The Taxonomy of Vascular Plants, The Macmillan Company, New York.

Nash, George V., 1896. American Ginseng: Its Commercial History, Protection, and Cultivation, U.S. Department of Agriculture Bulletin No. 16, Revised Edition.

Schuyler, Mathew F., 1927. Field Book of American Wildflowers, Revised Edition, G.P. Putnam and Sons, New York.

Staba, E. John, and Shiow-Edith Chen, 1979. An Overview of Ginseng Chemistry, Parmacology and Anti-Tumor Effects, In Official Proceedings, First National Ginseng Conference, May 1 and 2, 1979, Lexington, Kentucky.

U.S.D.A., 1979. Ginseng, Foreign Agriculture Circular (March, 1979), U.S. Department of Agriculture, Foreign Agricultural Service, Washington, D.C.

U.S.D.A., 1980. Ginseng, Foreign Agriculture Circular (March, 1980). U.S. Department of Agriculture, Foreign Agricultural Service, Washington, D.C.

U.S.D.A., 1981. Ginseng, Foreign Agriculture Circular (April, 1981), U.S. Department of Agriculture, Foreign Agricultural Service, Washington, D.C.

References for Maps of Ginseng Distribution by Counties

Adams, Joseph, Morris Arboretum, Philadelphia, Pennsylvania, letter to Keith Schreiner, U.S. Fish and Wildlife Service, August 25, 1977.

Allen, Charles M., Mary G. Curry and Ben F. Martin, 1975. A Vascular Flora of St. Helena and West Feliciana Parishes, Louisiana, The University of Southern Louisiana, Research Series No. 39, Lafayette, Louisiana.

Barkley, Sam, Biologist, Endangered Species Program, Arkansas Game and Fish Commission, Compilation of public input received in response to proposed listing of America ginseng as a federally endangered or threatened species, January 6, 1978.

Bampton, Theodore B., Deputy Commissioner, Conservation and Preservation, Department of Environmental Protection, State of Connecticut, letter to Mr. Keith Schreiner, U.S. Fish and Wildlife Service, September 28, 1977, and accompanying status report of ginseng in Connecticut.

Barkley, T.M. (ed.), 1977. Atlas of the Flora of the Great Plains, Iowa State University Press, Ames, Iowa.

Blodget, Bradford G., State Ornithologist, Division of Fisheries and Wildlife, The Commonwealth of Massachusetts, letter to Lynn A. Greenwalt, Director, U.S. Fish and Wildlife Service, September 6, 1977.

Boner, Rex R., Division of Planning and Development, Tennessee Department of Conservation, letter and accompanying materials to Roger E. McManus, U.S. Fish and Wildlife Service, August 11, 1977.

Cantner, Dan E., Chief, Division of Wildlife Resources, Department of Natural Resources, State of West Virginia, letter and accompanying materials to William Y. Brown, Endangered Species Scientific Authority, February 21, 1978.

Connecticut Geological and Natural History Survey, 1930. Catalog of Flowering Plants and Ferns of Connecticut.

Corson, Bernard W., Director, Fish and Game Department, Concord, N. H., letter and accompanying report to William Y. Brown, Endangered Species Scientific Authority, October 11, 1977.

Deam, Charles C. 1940. Flora of Indiana, Indiana Department of Conservation, Division of Forestry, Indianapolis, Indiana.

Delcourt, H. R. and P. A. Delcourt, 1975. The Blufflands: Pleistocene Pathway into the Tunica Hills. The American Midland Naturalist 94:385-400.

Eastman, L. M., 1976. Ginseng, Panax quinquefolius L., in Maine and its Relevance to the Critical Areas Program, Planning Report No. 16, State Planning Office, Augusta, Maine.

Fairbrothers, David E., Department of Botany, Rutgers, The State University of New Jersey, Piscataway, New Jersey, letter to Keith M. Schreiner, Acting Director, U.S. Fish and Wildlife Service, September 19, 1977.

Farnsworth, Edward G., Research Associate, Institute of Ecology, University of Georgia, letter to Roger McManus, U.S. Endangered Species Scientific Authority, April 3, 1979.

Fassett, N.C. and H. J. Elser, 1950. Preliminary Reports on the Flora of Wisconsin, Wisconsin Academy of Sciences, Arts, and Letters.

Friedman, Kenneth A., Executive Director, Lehigh Valley Conservancy, Inc., Bethlehem, Pennsylvania, letter to U.S. Fish and Wildlife Service, October 26, 1977.

Georgia Botanical Society Records.

Georgia's (State of) Program for the Conservation and Determination of the Biological Status of American Ginseng (Panax quinquefolium L.), submitted to the U.S. Endangered Species Scientific Authority, May 9, 1979.

Gimpel, William F., Jr., Supervisor, Plant Protection, Department of Agriculture, College Park, Maryland, letter to William Y. Brown, Executive Secretary, Endangered Species Scientific Authority, June 14, 1979.

Groutage, Thomas M., Federal Aid, memorandum to the Endangered Species Coordinator, Region 3, September 28, 1977.

Hale, James B., Director, Office of Endangered and Nongame Species, Department of Natural Resources, State of Wisconsin, letter and accompanying materials to Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, July 20, 1979.

Hardin, J.W. 1977. Vascular Plants, in J. E. Cooper, S. S. Robinson and J. B. Funderberg (Eds.) Endangered and Threatened Plants and Animals of North Carolina, North Carolina State Museum of Natural History, Raleigh, North Carolina.

Illinois Natural Areas Inventory.

Illinois Nature Reserves Commission, 819 North Main Street, Rockford, Illinois, Registry of Endangered, Threatened, Vulnerable and Rare Species of Illinois,

Illinois Department of Conservation, Division of Forestry, Wild American Ginseng, a brochure on American ginseng.

Indiana Department of Natural Resources, 1979 Ginseng Survey, Department of Natural Resource Properties,

Jones, Steven M., Research Forester, College of Forest and Recreational Resources, Clemson University, Clemson, South Carolina, letter to Lynn A. Greenwalt, U.S. Fish and Wildlife Service, September 6, 1977.

Jones, George Neville and George Danon Fuller, 1955. Vascular Plants of Illinois. University of Illinois Press, Urbana, Illinois and Illinois State Museum, Springfield, Illinois.

Keith, James H., Director, Division of Nature Preserves, letter to William Y. Brown, Endangered Species Scientific Authority, August 27, 1979.

Kirkman, L. K., 1974-75. The Flora of Cheathum Annex, York, County, Va., Proceedings (incomplete reference), page 57.

Maine Register of Critical Areas, Draft, June 7, 1977.

Marshall, John H., Coordinator, Ohio Ginseng Managment Program, Ohio Department of Natural Resources, letter and accompanying material to Richard N. Smith, Acting Associate Director--Research, U.S. Fish and Wildlife Service, July 11, 1980.

McDearman, Will, Research Specialist, Mississippi Natural Heritage Program, letter to Arthur Burns, Governor's Office, Jackson, Mississippi, August 30, 1977.

Mohr, Charles, 1901. Plant Life of Alabama, Contributions from the U.S. National Herbarium, Volume 6. U.S.D.A. Montgomery, Alabama.

Natural Heritage Program, Kentucky Nature Preserves Program, Material supplied to the Endangered Species Scientific Authority.

Natural Heritage Program, Department of Natural Resources, State of West Virginia, The West Virginia Ginseng Report, Year 1980, July 16, 1980.

Oklahoma Biological Survey, University of Oklahoma and School of Biological Sciences, Oklahoma State University, Field Surveys and Status Evaluation on Proposed and Candidate Endangered and Threatened Plant Species of Oklahoma, December, 1978.

Pullen, Thomas M., Professor of Biology, The University of Mississippi, letter to Keith Schreiner, Acting Director, U.S. Fish and Wildlife Service, October 3, 1977.

Piercon, George H., Chief, Bureau of Forest Management, Department of Environmental Protection, State of New Jersey, letter to Richard M. Parsons, Chief, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service.

Pike, Dale E., Biologist, West Virginia Heritage Program, Department of Natural Resources, State of West Virginia, letter and accompanying materials to Roger McManus, U.S. Fish and Wildlife Service, July 19; 1977.

Pogge, Franz L., Forestry Research Technician, Northeastern Forest Experiment Station, Forest Service, U.S. Department of Agriculture, letter to U.S. Fish and Wildlife Service, September 26, 1977.

Porter, Duncan M., Associate Professor of Botany, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, letter to Earl J. Shiflet, Secretary of Commerce and Resources, Commonwealth of Virginia, September 15, 1977.

Program Description of the Management and Biological Monitoring of American Ginseng in North Carolina, The North Carolina Department of Agriculture, May 20, 1980.

Radford, Albert E., Harry E. Ahles, and C. R. Ritchie Bell, 1965. Manual of the Vascular Flora of the Carolinas, University of North Carolina Press, Chapel Hill, North Carolina.

Regional Director, Region 6, U.S. Fish and Wildlife Service Memorandum dated November 10, 1977 to Director, U.S. Fish and Wildlife Service.

Roberts, C. R. and Jo Richardson, 1978. Wild Ginseng Survey in Kentucky.

Sleyermark, Julia A., 1963. Flora of Missouri, Iowa State University Press, Ames, Iowa.

Smith, Edwin B., Professor of Botany, University of Arkansas, letter to Roger McManus, U.S. Fish and Wildlife Service.

Smith, Larry, Tennessee Department of Conservation, Nashville, Tennessee, letter and accompanying material to Richard M. Parsons, U.S. Fish and Wildlife Service, May 16, 1980.

Smith, Welby, Botanist, Natural Heritage Program, Department of Natural Resources, State of Minnesota, letter and accompanying materials to Joseph Dowhan, Office of the Scientific Authority, U.S. Fish and Wildlife Service, August 31, 1981.

Straughsbaugh, P. D., and E. L. Core, 1958. Flora of West Virginia, Part 3, West Virginia University Bulletin. Series 58, No. 12-3: 571-1075.

Sutter, Robert, Botanist, Pesticide and Plant Protection Division, North Carolina Department of Agriculture, letter and accompanying materials to Linda McMahan, International Convention Advisory Commission, July 1, 1981.

Tatnall, 1946. Flora of the Eastern Shore.

Taylor, Connie, Chairman, Oklahoma Academy of Sciences, Endangered Species Committee, letter to Carol D. Justice, U.S. Fish and Wildlife Service, September 1, 1977.

Taylor, Sylvia, Department of Natural Resources, State of Michigan, letter to William Y. Brown, U.S. Endangered Species Scientific Authority, March 29, 1979.

Taylor, Sylvia, Department of Natural Resources, State of Michigan, Materials sent to Joseph Dowhan, Office of the Scientific Authority, U.S. Fish and Wildlife Service, August, 1981.

Tiffney, Wesley, N., Professor of Biology Emeritus, Boston University, letter to Keith Schreiner, U.S. Fish and Wildlife Service, September 1, 1977.

Tiner, James, Management Forester, Arkansas Forestry Commission, letter to Richard M. Parsons, Chief, Federal Wildlife Permit Office, May 16, 1980.

Trammell, Marshall W., Jr., State Supervisor, Plant Pest Control, Department of Agriculture and Consumer Service, Commonwealth of Virginia, Richmond, Virginia, letter and accompanying material to Richard M. Parsons, U.S. Fish and Wildlife Service, May 16, 1980.

Wagner, Warren, Jr., Professor of Botany, Division of Biological Sciences, The University of Michigan, letter to Dr. Sylvia Taylor, Department of Natural Resources, State of Michigan, July 28, 1977.

White, David, Rare and Endangered Plant Project, Museum of Natural Sciences, Ontario, Canada, letter and accompanying material to Linda McMahan, Internation Convention Advisory Commission, June 5, 1981.

Appendix A

Summaries of Status and Management of wild American Ginseng

Summary Table
Status, Legal Authority, Conservation and Management of American Ginseng for States within its Historical Distribution

State	Legal Status[a]	Authority[b]	Conservation[c] Program	Managment[d]	Export Approval 77/78	78/79	79/80	80/81	81/82
Alabama	R	5	2	3		x	x	x	x
Arkansas	R-S	1	2	1					
Connecticut	R	5	2	3					
Delaware	R	5	3	3					
Georgia	S	1 and 4	1	1		x	x	x	x
Illinois	T	3	1	2		x	x	x	x
Indiana	R-S	1	1	1		x		x	x
Iowa	S	1 and 4	1	1		x	x	x	x
Kentucky	S	2	1	2		x	x	x	x
Louisiana	R	4	3	3					
Maine	R	5	2	3					
Maryland	S	1 and 4	1	1		x	x	x	x
Massachusetts	R	4	3	3					
Michigan	T	3	1	1	x	x			
Minnesota	S	1	2	1		x	x	x	x
Mississippi	R	5	3	3					
Missouri	S	3	1	2					
Nebraska	R	4	3	3					
New Hampshire	R	5	3	3					
New Jersey	R	5	3	3					
New York	R	1	2	1		x		x	
North Carolina	S	1	1	1		x	x	x	x
Ohio	S	2 and 4	1	1			x	x	x
Oklahoma	R	5	3	3					
Pennsylvania	R-S	5	3	3					
Rhode Island	E	4	3	3					
South Carolina	R	5	3	3					
South Dakota	R	4	3	3					
Tennessee	S	2	1	2		x	x	x	x
Vermont	R	4	3	3					x[e]
Virginia	T	3	1	1		x	x	x	x
West Virginia	S	1	1	1		x	x	x	x
Wisconsin	R-S	1	1	1		x	x	x	x

[a] E = presumed extinct; T = listed as threatened under a state law; R = rare but not listed under a state endangered species law; S = populations stable or common.

[b] 1 = a law specificially protects ginseng and allows regulation of its harvest; 2 = an executive order allows ginseng program; 3 = listed under a state endangered species act or authority for program is assumed from broad legislation; 4 = state has an endangered species law that could provide possible protection if ginseng becomes threatened with extinction; 5 = no legal protection

[c] 1 = state has substantial program to study the biology or conserve populations; 2 = state is making some attempt to study or conserve; 3 = state has no or minimal program

[d] 1 = strong management program with collecting season, inspection and record-keeping provisions; 2 = voluntary management program; 3 = no management program

[e] Export from Vermont is approved only for artificially propagated American ginseng.

State Contact:	Mr. Richard Cumbi Alabama Forestry Commission 513 Madison Ave. Montgomery, Alabama 36105	State Alabama

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: none

State Registration Requirements: none. voluntary questionnaire sent to dealers.

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness: State hopes to gain information in ginseng numbers and distribution by use of the voluntary questionnaire.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State: Possibly rare or endangered. Found only in a few northern counties.

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	estimates range from "good numbers in parts of the state" to "endangered"
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	James Timer, Asst. State Forester Arkansas Forestry Commission P.O. Box 4253, Asher Station Little Rock, Arkansas 72214 (501) 371-1732	State Arkansas

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Arkansas Act 608 of 1979. Arkansas Forestry Commission to regulate harvesting and sale of wild American ginseng; regulations issued in 1980.

State Registration Requirements: All dealers who purchase Arkansas ginseng for sale across state lines must register.

State Inspection and Record-Keeping Requirements: Dealers must keep all records of sales and purchases for at least two years.

Number of Dealers Identified by the State: 4 (3 in Arkansas) in 1979/80

Ginseng Season: August 15 - December 1

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness: In the program's first year (1979/80), it was partially ineffective because the ginseng diggers were generally unaware of the new law.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	1,922 lbs. (wild) + 300 lbs. unreported	816 lbs. (wild)
1980/81	840 lbs. (wild)	1,890 lbs. (through July 1981)

Status of wild ginseng in the State: Locally rare but abundant in much of the state.

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Ginseng is most abundant (10 or more localities per county) in the northwest part of the state.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Collectors report 50-250 roots per pound. Collecting ranges from "slight" in some counties to heavy in others - two counties reported with "heavy" harvest intensity.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	State has started a research program with 10 research plots in 4 regions of the state.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Ms. Leslie Mehrhoff, Biologist Connecticut Geology Natural History Survey (203) c/o U 42 486-3266 University of Connecticut Storss, Connecticut 06268	State Connecticut

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78: $125	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

very rare

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Populations rarely exceed "a few dozen plants or so;" plants scattered widely, often with 50-60 feet between plants; 12-100 extant populations.
2. Statewide abundance and distribution:	
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	Seed production low in native populations. 10-15 or fewer fruits per plant.
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	Germination percentage unknown.
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Past heavy collecting pressure may have led to the current rare status. Little evidence of present commercial harvest of native wild ginseng, but significant production of "wild-grown" ginseng using non-native seeds.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Dr. Charles Dunham Plant Science Department University of Delaware Dover, Delaware 19901	State Delaware

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: Voluntary Season? yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State: very rare

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends
1. Amount, quality, and distribution of habitat:
2. Statewide abundance and distribution:
3. Trends in amount and quality of available habitat:
Life History and Reproductive Biology
1. Size and age composition of existing populations:
2. Phenology: flowering and fruiting periods:
3. Variation of flower and fruit production as related to plant age:
4. Seed production, dormancy, viability, and dispersion:
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:
6. Vegetative growth and dormancy factors:
Harvest Data and Management
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:
3. Management practices by private landowners and Federal and State officials:

State Contact:	Ms. Mary Anne Young, Specialist Protected Plants/Natural Areas Game & Fish Division 270 Washington St., S.W. Atlanta, Georgia 30334	State
(414) 656-3523		Georgia

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Ginseng Protection Act of 1979 (Code of Ga. Annotated (1978 Supp.) §§43-2801 to -2807 passed to provide a ginseng management program. The Georgia Wildflower Preservation Act of 1973 is possible authority should the state ever consider wild ginseng as threatened or endangered, H.B. No. 594 (1979), Code of Ga. Annotated §§43-1801 to -1806.

State Registration Requirements: All dealers must register by July 15 of each year.

State Inspection and Record-Keeping Requirements: All dealers must submit reports by January 31 of each year on department forms. Reports must contain amount collected and disposition, as well as county of collection.

Number of Dealers Identified by the State: 4 in 1979/80

Ginseng Season: August 1 - December 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness:

note: law also prohibits digging wild ginseng with fewer than three prongs and requires diggers to replant seeds near the parent plant.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	1,847 lbs. (wild); 845 lbs. (cult.)	131 lbs. (wild)
1979/80	1,481 lbs. (wild); 354 lbs. (cult.)	1,049 lbs. (wild)
1980/81		513 lbs. (wild through July 1981)

Status of wild ginseng in the State: rare but stable

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Suitable habitat is available in every county above the fall line and in those counties bordering the Cattahoochee River in the coastal plain. Total suitable habitat in roughly one half of the state.
2. Statewide abundance and distribution:	Scattered populations throughout approximately 60% of the state. Large populations in remote mountain areas. Also found in coastal plain, and even in urban areas.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	Range from 5-10 plants per population to "hundreds." In 1981, there were 11.2 plants per research plot compared to 8.3 in 1980. Most had 3 or fewer prongs.
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, domancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and domancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Research program underway. Ginseng added to information requested in routine surveys. State will develop a program on state-owned lands. 44 research plots have been established.
3. Management practices by private landowners and Federal and State officials:	No plants may be collected in state parks without permission.

State Contact:	John Schwegman, Ginseng Program Coordinator Illinois Department of Conservation Division of Forest Resources and Natural Heritage 605 Stratton Building 400 South Spring Street Springfield, Illinois 62706	State
(217) 782-1823		Illinois

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: No legislation specific for ginseng. Authority is the Endangered Species Protection Act, Illinois Annotated Statutes, Chapter 8, §§331-340 (1975).

State Registration Requirements: Voluntary registration program. No fee.

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State: 11 in 1980.

Ginseng Season: none **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78: $80-90	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	7,217 lbs. (wild)	5,303 lbs. (wild)
1980/81	3,829 lbs.	5,235 lbs.(wild through July '81)

Status of wild ginseng in the State: Listed as "threatened" by Illinois Endangered Species Protection Board and the Illinois Act. Population is "generally stable."

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Approximately 3.9 million acres of forest in the state. Found in shady hardwood forests.
2. Statewide abundance and distribution:	Distributed widely throughout the state. Probably occurs in all counties of the state. Found in moist ravine bottoms, mesic upland forests, and dry-mesic forests. 150 known populations.
3. Trends in amount and quality of available habitat:	Gradual loss of habitat from urban development and agricultural expansion.
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	Individual populations consist of 10-50 plants. Exploited populations commonly have only a few plants.
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	In 1980, a drought caused some plants to wilt before the harvest season - the drought did not kill the roots.
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Based on an estimate of 5.2 lbs collected per digger gives an estimated 1,387 diggers in the state.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Most diggers harvest in the fall and many plant the seeds. It is illegal to dig without permission on Department of Conservation land (2 arrests in 1979). Research program underway.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	John A. Bacone, Director Division of Nature Preserves 601 State Office Building Indianapolis, Indiana 46204	State
(317) 292-4552		Indiana

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☐ no ☑	yes ☑ no ☐

Legal Authority: Public Law 107 of 1980, Ind. Code Ann. §14-4-8. Department of Natural Resources to monitor ginseng and insure its future survival. Regulations issued by the Department on June 23, 1980.

State Registration Requirements: All dealers must obtain license from the Indiana Department of Natural Resources. $10 fee. Liceense issued annually and expire March 31.

State Inspection and Record-Keeping Requirements: Applicants for license must provide a summary of all ginseng purchased and sold during the preceeding year. Applicants must also keep records of shipments, county of collection, etc., for inspection.

Number of Dealers Identified by the State: 27 in 1979/80; 55 in 1980/81

Ginseng Season: August 15 - March 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness: The 1980 program worked well with good cooperation from the dealers. There was some confusion because the program started late in the growing season.

Reported Price/lb	1977/78: $90-120	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	2,500 lbs.	
1980/81	10,342 lbs. (wild) + 85 lbs. (cult.)	6,591 lbs. (wild through July '81)

Status of wild ginseng in the State:

status unclear

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	16-18% of Indiana is forested (3.8 - 4.2 million acres). Ginseng is found on moist, well-drained slopes and uplands in relatively undisturbed oak/hickory or beech/maple woods.
2. **Statewide abundance and distribution:**	Ginseng abundance ranges from only a few dozen plants to relatively common. Approximately 100 known populations. Most frequent in the southern part of the state.
3. **Trends in amount and quality of available habitat:**	Forest land area is remaining stable.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	Population size varies from one or few to several hundred. Some populations in the state have large, mature plants.
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	Seed production increases with age of the plant to a maximum of 50-60 seeds per plant.
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	Seeds usually take 18 months to germinate (germination time ranges from 1 - 3 years). Many first year plants have three prongs.
6. **Vegetative growth and dormancy factors:**	One ginseng collector indicated that plants may remain dormant for as many as five years.
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	Growing "woods-grown" ginseng is common in the state. Collecting pressure is highest in the southern part of the state.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	Most diggers replant seeds from harvested plants and only dig mature plants. Some inexperienced collectors dig young plants. Research program underway to locate ginseng distribution and determine it's status.
3. **Management practices by private landowners and Federal and State officials:**	Unlawful to take plants on lands owned by the Department of Natural Resources without a permit.

State Contact:	Dean Roosa, Ecologist State Conservation Commission (515) Wallace State Office Building 281-8676 Des Moines, Iowa 50319	State Iowa

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: House File 2042, passed May 1980. Authorizes State Conservation Commission to regulate dealers in American ginseng. Commission has adopted implementing regulations. Iowa Ann. Code §§290-21.1(107) to 290.21.6(107). State also has an endangered species law, Iowa Code Ann. §§109A.1 to .10 (West).

State Registration Requirements: Yearly registration is required for all persons who buy or sell Iowa-dug ginseng. Export certificates are required.

State Inspection and Record-Keeping Requirements: Record-keeping is required of all registered dealers. Dealers must submit records by March 15 of each year for the previous season's business.

Number of Dealers Identified by the State: 3 out of state dealers

Ginseng Season: Aug. 15 to Oct. 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness: Dealer compliance was good in 1980. There was some misunderstanding that should clear up with time.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		1,116 lbs. (wild)
1980/81	approx. 2,000 lbs. (1,800 wild)	1,140 lbs. (wild through July '81)

Status of wild ginseng in the State:

generally stable to increasing, declining in some counties.

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Approximately 2 million acres of woodland in Iowa. About 1/5 is available as ginseng habitat, that is, north and east facing slopes and flat uplands. Ginseng common with maple and basswood trees.
2. **Statewide abundance and distribution:**	Ginseng grows in about one half of the state. Ginseng is most frequent in the eastern counties.
3. **Trends in amount and quality of available habitat:**	Disappearing at about 1 % per year
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	20 to 100 plants per acre in moist woodlands that have not been grazed. Most populations vary from fewer than 10 plants per "patch" to 50 plants per "patch."
2. **Phenology: flowering and fruiting periods:**	Berries begin turning red in mid-August and are ripe by September 1. Flowering is in early May.
3. **Variation of flower and fruit production as related to plant age:**	Highly variable
4. **Seed production, dormancy, viability, and dispersion:**	Seed dispersion may be due to ruffed grouse.
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	Seed predation by small mammals is high. Predators include western harvest mouse, Reithrodontomys megalotis, and the eastern chipmonk, Tamias striatus. The rugged grouse may eat some seeds.
6. **Vegetative growth and dormancy factors:**	Approximately 25% of shoots do not grow each year. Leaves turn yellow after seeds ripen. Insect damage to the leaves is frequent.
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quality of harvested roots, number of roots per pound harvested:**	Harvest pressure is stable. 10% fewer roots dug in 1979 than in previous years. Diggers generally harvest mature plants and plant seeds, but some diggers still dig in the spring. 500-1000 diggers in the state. Collecting pressure is highest in the northeastern part of the state.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	State has monitoring program. Research plots were established in 1978.
3. **Management practices by private landowners and Federal and State officials:**	Harvest not permitted on state-owned lands.

State Contact:	Joe Howard Rogers Kentucky Council on Agriculture (502) Division of Domestic Markets 564-6686 Fountain Place Frankfort, Kentucky 40601	State Kentucky

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Executive Order 78-412 (1978) and House Resolution #128 (1980). Established a study program and authorized a voluntary program. Cooperative program among the Kentucky Ginseng Association, the Kentucky Department of Agriculture, the University of Kentucky, and the Governor's Council on Agriculture.

State Registration Requirements: voluntary

State Inspection and Record-Keeping Requirements: voluntary

Number of Dealers Identified by the State: 12 in 1978-79; 19 in 1979/80

Ginseng Season: August 15 - December 31

Voluntary Season? yes ☑ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78: $85 - 100	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	23,046 lbs.	
1979/80	14,466 lbs.	10,202 lbs. (wild)
1980/81		14,042 lbs. (wild through July '81)

Status of wild ginseng in the State: Relatively common. Stable.

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Study plots, usually on south-facing slopes, showed ginseng in 50 % or more shade. Forests cover 48 % of Kentucky (approx. 12 million acres). Most sites low in phosphorus and had a pH of 4.55 to 7.44.
2. **Statewide abundance and distribution:**	In 1980, a survey of the study plots showed an increase in number of ginseng plants since 1978.
3. **Trends in amount and quality of available habitat:**	Total forest has increased by 3 % since 1976 and by 6 % since 1949. Some strip mining disturbed ginseng habitat.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	Population size in 64 study plots ranged from "none" to "hundreds" of plants per acre (est. average of 50 plants per acre in areas not reseeded. 32 % of plants had 4 or more prongs.
2. **Phenology: flowering and fruiting periods:**	Plants from different parts of North America flower and set fruit at different times. Canadian seed ripens 2-5 weeks before Kentucky seed. Plants show various stages of flower and fruit by late June.
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and dormancy factors:**	
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	Most digging is in August through September.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	State has monitoring program on 64 sites. As many as 25 % of the diggers may dig ginseng in the spring and summer. Others harvest in the fall and plant the seeds.
3. **Management practices by private landowners and Federal and State officials:**	Digging ginseng is prohibited or limited on many state-owned lands.

State Contact:	D. L. McFatter, State Forester Louisiana Forestry Commission P.O. Box 1678 Baton Rouge, Louisiana 70821	State
(504) 925-4510		Louisiana

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is the state endangered species law, Louisiana Revised Statutes Annotated, Title 56, §§1901 to 1907 (1980 Supp.)

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

rare. possibly threatened or endangered.

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Limited habitat.
2. Statewide abundance and distribution:	
3. Trends in amount and quality of available habitat:	Decreasing.
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Fewer than 12 amateur collectors in the state.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Harry R. Tyler, Jr. Critical Areas Program Manager State Planning Office 184 State St. Augusta, Maine 04333	State
(207) 289-3155		Maine

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

rare

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Found in low level wet areas, steep mountain slopes, and wooded ravines.
2. **Statewide abundance and distribution:**	Rare. Only a few known populations.
3. **Trends in amount and quality of available habitat:**	
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	Typically small populations (fewer than 30 plants) covering only a few square meters. Few populations known.
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	Dispersal of seeds is by birds, animals, and by gravity.
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	Reproduction is only by seeds.
6. **Vegetative growth and dormancy factors:**	
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	No known current harvest. Populations are too small to support harvest.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	
3. **Management practices by private landowners and Federal and State officials:**	Wild ginseng is on privately-owned lands. The State Planning Office has listed or is considering listing ginseng-areas as "Critical Areas" to help assure continued habitat for ginseng.

State Contact:	William F. Gimpel, Jr. Supervisor, Plant Protection	State
(301) 454-3844	Maryland Department of Agriculture College Park, Maryland 20742	Maryland

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Regulations issued by the Plant Protection Section, Department of Agriculture, Title 15, Subtitle 0.9, §§15.09.03 to 15.09.07. Authorizing legislation is Md. Annotated Code §5-302. Other possible authority is the Nongame and Endangered Species Conservation Act, Natural Resources Code of Md. Ann., Title 10, §§10-2A-01 to -09 (1979 Supp.).

State Registration Requirements: Collection permits are required ($2.00 each). Certification required by export ($3.00 each).

State Inspection and Record-Keeping Requirements: Collectors must keep records for one year on county of collection, date of collection, approx. number of plants per patch, number collected, number of seeds resown. Records must be shown upon request.

Number of Dealers Identified by the State: 115 registered collectors in 1980; 18 registered dealers in 1980.

Ginseng Season: August 20 - December 1 (only 3 or more prongs with mature seeds may be collected)

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness: Management is improving. There is a greater awareness and appreciation for the ginseng's life cycle and habitat requirements. the 1980 program was successful.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	57 lbs. (+ 200 lbs. uncertified)	
1979/80	108 lbs. (perhaps 200 lbs. uncertified)	0
1980/81		195 lbs. (wild through July 1981)

Status of wild ginseng in the State:

Locally common but not generally abundant. Stable.

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Suitable habitat is in the mountainous parts of the state as well as in counties bordering the Chesapeake Bay.
2. **Statewide abundance and distribution:**	Ginseng occurs frequently in the western counties of the state.
3. **Trends in amount and quality of available habitat:**	Much ginseng habitat was cleared in the 1930's. It is now regrowing and ginseng is becoming more common.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and dormancy factors:**	
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	Most collectors harvest in the fall and plant the berries. Some collectors establish new ginseng areas by planting seeds. 103 licensed collectors in 1979/80. Limited research program underway.
3. **Management practices by private landowners and Federal and State officials:**	

State Contact:	James M. Mbrash, State Ornithologist Division of Fisheries and Game Leverett Saltonstall Building Government Center 100 Cambridge Street Boston, Massachusetts 02202	State
(617) 727-3151		Massachusetts

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is the state endangered species law, Mass. Gen. Laws Ann., Chapter 131, §26A (West).

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State: Very rare. Has never been widespread.

Current and Past Abundance, Range and Distribution, Including Trends
1. Amount, quality, and distribution of habitat:
2. Statewide abundance and distribution:
3. Trends in amount and quality of available habitat:
Life History and Reproductive Biology
1. Size and age composition of existing populations:
2. Phenology: flowering and fruiting periods:
3. Variation of flower and fruit production as related to plant age:
4. Seed production, dormancy, viability, and dispersion:
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:
6. Vegetative growth and dormancy factors:
Harvest Data and Management
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:
3. Management practices by private landowners and Federal and State officials:

State Contact:	Dr. Sylvia M. Taylor, Assistant Coordinator Endangered Species Program (517) Department of Natural Resources 373-1263 Stevens. T. Mason Building, Box 30028 Lansing, Michigan 48909	State Michigan

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☑ no ☐	yes ☑ no ☐	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: P.A. 203, 1974. The Endangered Species Act of 1974, Mich. Comp. Laws §§229.221 to .230; Penal Code 750.551 (trespass, injuring and destroying of medicinal plants).

State Registration Requirements: Permit required to collect under the Michigan Act.

State Inspection and Record-Keeping Requirements: Collectors must report each sale within 30 days.

Number of Dealers Identified by the State: 10 collectors.

Ginseng Season: August 15 - December 1 (3 or more prongs only) **Voluntary Season?** yes ☐ no ☑

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	10 lbs.	
1980/81		

Status of wild ginseng in the State: "threatened" under the Michigan Act.

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Occurs in woodlands of the state and in wooded barrier dunes along Lake Michigan.
2. **Statewide abundance and distribution:**	Occurs infrequently in the southern part of the state.
3. **Trends in amount and quality of available habitat:**	May be increasing due to regrowth of prior grazing lands.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and dormancy factors:**	
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	Some illegal collecting is occurring.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	Variable.
3. **Management practices by private landowners and Federal and State officials:**	No collecting allowed in state parks and recreation areas. Permits required on other state-owned lands.

State Contact:	Carrol L. Henderson, Supervisor Section of Wildlife Department of Natural Resources, Box 7 Centennial Office Building St. Paul, Minnesota 55155	State
(612) 296-3344		Minnesota

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: S.F. No. 708 (1979) amending Minn. Statues 1978, §84-028, Subdivision 1; §97.48 by adding 98.46, Subdivision 3. Department of Natural Resources to carry out ginseng harvest program. State has also written regulations.

State Registration Requirements: License required of all dealers. $5.00 fee.

State Inspection and Record-Keeping Requirements: All dealers must keep records in a record book provided by the state. The record books are open for inspection during all reasonable hours. Dealers must also submit reports.

Number of Dealers Identified by the State: 7 in 1979/80.

Ginseng Season: August 15 - December 31 (plants must have 3 or more prongs and collecter must replant seeds) **Voluntary Season?** yes ☐ no ☑

State's Remarks on Program Effectiveness:

Program worked well in 1979/80.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	1,028 lbs. (wild) + 494 lbs. (cult.)	921 lbs. (wild)
1980/81		229 lbs. (wild through July '81)

Status of wild ginseng in the State: stable

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Ginseng is found frequently in hardwood forests of southeastern Minnesota.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, domancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	There is an estimated 2000 - 2200 lbs of ginseng harvested per year.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	Ginseng is protected in the state parksin the 40,000 acre Whitewater Wildlife Area, and on state forest lands. Harvest by permit only in some wildlife areas.

State Contact:	William D. Turcotte, Assistant Director Game and Fish Commission Box 451 Jackson, Mississippi 39205	State Mississippi

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State: Estimates range from "endangered or rare" to "threatened."

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Found only in the northeastern part of the state.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	No state management program.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	James H. Wilson, Endangered Species Coordinator Missouri Department of Conservation P.O. Box 180 Jefferson City, Missouri 65102	State
(314) 751-4115 ext. 289		Missouri

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: No specific authority for ginseng. Department of Conservation has broad powers to conserve forest resources.

State Registration Requirements: voluntary

State Inspection and Record-Keeping Requirements: voluntary

Number of Dealers Identified by the State: 18 in 1980/81 (12 in Missouri and 6 out-of-state)

Ginseng Season: August 15 - March 1

Voluntary Season? yes ☑ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78: $83 - 116	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		5,132 lbs. (wild)
1980/81	2,660 lbs. (wild) 110 lbs. (cult.)	2,325 lbs. (wild through July 1981)

Status of wild ginseng in the State:

Increasing and stable in some areas, decreasing in a few counties.

- State's Response to FWS Request for State by State Infomation -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	The entire state is potential habitat.
2. Statewide abundance and distribution:	Widely but sparsely distributed, most common in south and northeastern parts of the state. Presumed to occur in all counties of the state.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	One-year plants have 1 or 2 prongs. Flower number per inflorescence increases with the age of the plant.
4. Seed production, dormancy, viability, and dispersion:	In 1980, 53 % of plants failed to develop fruit because of drought; this compares to 21% in previous years. High yearly variation.
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	Research program shows slower rates of growth and development for wild ginseng than was expected based on studies of cultivated ginseng.
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Average number of roots per pound probably ranges from 80 - 120. The states estimates that there are 4,500 ginseng collectors.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	A research program in cooperation with Washington University is underway.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	William Bailey, Assistant Director Nebraska Game and Parks Commission P.O. Box 30370 Lincoln, Nebraska	State
(402) 464-0641		Nebraska

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is the Nongame and Endangered Species Conservation Act, Rev. Stat. of Nebraska §§37-430 to -438 (1978 Supp.).

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State: Rare

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Found in moist woods, particularly in the Missouri River blufflands.
2. Statewide abundance and distribution:	uncommon
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Howard Townsend, Commissioner New Hampshire Department of Agriculture State House Annex Concord, New Hampshire 03301	State
(603) 271-3551		New Hampshire

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

rare or endangered

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	One population of 40-50 plants and two other populations with fewer plants are known.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	No known collection.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	G. H. Pierson, Chief Forest Management Secetion (609) New Jersey Bureau of Forestry 292-2531 Department of Environmental Protection Trenton, New Jersey 08625	State New Jersey

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

rare

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Rare and local in the northwestern part of the state. May be some populations in southern New Jersey.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	No known collection.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:		State
(518) 457-7370	Sandra Meier New York State Department of Environmental Conservation 50 Wolf Road Albany, New York 12233	New York

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☐ no ☑	yes ☑ no ☐

Legal Authority: N.Y. Environmental Conservation §9-1503 (McKinney) protects ginseng and other plants on state lands and prohibits taking on private lands without permission. Senate Bill 4979, passed March 26, 1981, authorizes Department of Environmental Conservation to regulate the harvest of ginseng.

State Registration Requirements: Dealers must register (voluntary program in 1979/80).

State Inspection and Record-Keeping Requirements: Registered dealers must report amount of ginseng purchased from New York in the previous season (voluntary in 1979/80).

Number of Dealers Identified by the State: 7 (plus one uncertified) in 1979/80.

Ginseng Season: August 15 - November 30 (voluntary in 1979/80) **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:
Program in 1979/80 did not work very well on a voluntary basis.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	350 lbs.	
1979/80		
1980/81	approx. 500 lbs. (wild)	1,020 lbs. (wild through July '81)

Status of wild ginseng in the State: increasingly rare

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Grows on well-drained, slightly alkaline soil in hardwood forests.
2. Statewide abundance and distribution:	May occur in all counties. Steady decline in known populations.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	150 dry roots per pound. Heavy harvesting in the northern and western parts of the state.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Extensive collection in the past. Research program is proposed.
3. Management practices by private landowners and Federal and State officials:	No collecting is allowed on state-owned lands.

State Contact:	Robert Sutter Plant Conservation Program Pesticide and Plant Protection Division North Carolina Department of Agriculture P.O. Box 27647 Raleigh, North Carolina 27611	State
(919) 733-6930		North Carolina

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Plant Protection and Conservation Act, Art. 20, Ch. 106, §§201.1 - 202.8 of the General Statutes of North Carolina (1979). General Statutes §14-392 (ginseng season); §14-79 (theft or larceny to steal cultivated ginseng); §14-393 (record keeping); §14-129 (permission of landowner). Dept. of Agriculture has issued regulations.

State Registration Requirements: [illegible]tion of dealers required by June 1 of each year.

State Inspection and Record-Keeping Requirements: Buyers must keep records. Export certificates required for sales out-of-state. Purchase records collected upon certification.

Number of Dealers Identified by the State: 26 (1978/79); 45 (1979/80; 39 (1980/81)

Ginseng Season: September 1 - March 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80: $100 - 130
1980/81: $120 - 150	Other:		

Reported Harvest	State Information	FWS Information
1978/79	3,136 lbs. purchased (2,886 exported)	
1979/80	4,243 lbs. purchased (2,070 exported)	12,285 lbs. (wild)
1980/81	3,847 lbs. purchased (4,630 exported)	6,704 lbs. (wild through July '81)

Status of wild ginseng in the State:

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Found in mixed deciduous forests and sometimes in coniferous forests. Prefers well-drained, clay loam soil.
2. Statewide abundance and distribution:	Locally common. Found in western mountains and central piedmont areas. Found in 57 counties.
3. Trends in amount and quality of available habitat:	Regrowth of forests since 1900 may be increasing ginseng habitat.
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	117 monitored populations vary from 1 to over 700 plants per locality. Most plants have 3 or fewer prongs.
2. Phenology: flowering and fruiting periods:	Blooms May through June with 6 to 20 white flowers in each cluster. Berries ripen and turn from green to red in August through October. Each berry has 2-3 flat, hard seeds.
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	Seeds require 18 months to germinate. If left on the plant, they often fall to the ground.
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	Once on the ground, the seeds become dry. Outer fleshy pulp dissappears in 2-3 months. Require constant moisture. 18 months later (April - June), seeds crack and seedlings emerge.
6. Vegetative growth and dormancy factors:	No vegetative propagation. The plant is perrenial and may remain dormant some years.
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	2,150 collectors in the state, an increase of about 20% since 1950. Number of roots per pound collected seems to be increasing. Approx. 0.5 million plants collected per year in the state. Number of roots per pound in 1980/81 decreased to 330 from 368 in 1979/80.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	State is carrying out a reaseach program on distribution, abundance, and biology of ginseng. Most collectors wait for the berries to ripen before they collect the roots.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	John H. Marshall, Coordinator Ohio Ginseng Management Program (614) Division of Natural Areas and Preserves 466-7803 Ohio Department of Natural Resources Fountain Square, Building F-1 Columbus, Ohio 43224	State Ohio

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Executive Order, O.R.C. §107.18(A), Series No. 18-15 (1979), Division of Natural Areas and Preserves of the Department of Natural Resources to manage ginseng harvest. If endangered or threatened status, state could use Ohio Revised Code §§1518.01 - 1518.09 (endangered species law).

State Registration Requirements: Dealers must have Dealer Permits

State Inspection and Record-Keeping Requirements: Dealers must submit reports.

Number of Dealers Identified by the State: 6 (all in Ohio) in 1979/80.

Ginseng Season: August 15 - December 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness:
Dealers were very cooperative in 1979/80.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	2,669 lbs.	
1979/80		14,536 lbs. (wild)
1980/81		11,253 lbs. (wild through July '81)

Status of wild ginseng in the State: Potentially threatened. Populations mostly stable to increasing.

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Occurs in hill country of the eastern and southern parts of the state.
2. **Statewide abundance and distribution:**	Occurs in 46 of the 88 counties. Frequent in the south and eastern parts of the state.
3. **Trends in amount and quality of available habitat:**	May be declining due to clearing of forests and strip mining.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	Dealers and collectors indicate that most populations consist of small, young plants.
2. **Phenology: flowering and fruiting periods:**	Flowering is late June to mid-July. Fruits mature in August to September.
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and dormancy factors:**	
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	More novices are collecting and collection pressure in increasing. Harvest intensity is moderate to heavy in many counties.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	New collectors may not be using traditional harvest techniques.
3. **Management practices by private landowners and Federal and State officials:**	Illegal to dig on public lands without permission.

State Contact:	Byron Moser, Chief Game Division Oklahoma Department of Wildlife Conservation P.O. Box 53465 Oklahoma City, Oklahoma 37152	State Oklahoma
(405) 521-2739 521-2730		

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: Voluntary Season? yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

rare

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Restricted to forests in the eastern part of the state.
2. Statewide abundance and distribution:	Found only in the extreme eastern counties. The state is on the western limit of the natural range of ginseng. Small isolated populations.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	One known population has been extirpated by collectors.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Patrick M. Lantz, Chief Forest Advisory Services (717) Department of Environmental Resources 787-3260 Bureau of Forests P.O. Box 1467 Harrisburg, Pennsylvania 17120	State Pennsylvania

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:

none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

Uncommon but far from rare. Perhaps vulnerable to further collecting pressure.

- State's Response to FS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	Probably in excess of 2 million acres, primarily in the Allegheny Plateau and the Ridge and Valley region.
2. **Statewide abundance and distribution:**	May be locally common in some areas. Known from 45 of the 67 counties.
3. **Trends in amount and quality of available habitat:**	Stable.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, domancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and domancy factors:**	May be some overbrowsing by deer in some areas, particularly in the northern parts of the state.
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	4,000 to 5,000 pounds harvested per year. Most collectors use traditional harvest practices. Moderate harvest harvest intensity in much of the state.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	
3. **Management practices by private landowners and Federal and State officials:**	Collection is prohibited on state-owned lands.

State Contact:	James Chadwick Deputy Chief of Wildlife Department of Environmental Management Washington County Government Center Wakefield, Rhode Island 02879	State Rhode Island

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is R.I. Gen. Laws §§20-37-1 to -5 (endangered species law).

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

probably extinct

- State's Response to FWS Request for State by State Infomation -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	One collection record from 1880. None collected since then.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Dr. Douglas A. Rayner, Field Biologist South Carolina Heritage Trust Program (803) South Carolina Wildlife and Marine Resources Department 758-8442 Suite 1116, Bankers Trust Tower Columbia, South Carolina 29201	State South Carolina

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority:
none

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:
Possibly threatened.

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Common in inaccessible woods in the mountains of South Carolina and less common in accessible locations.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Heavy collecing pressure. Collecting should not be allowed in the state. Much South Carolina ginseng is illegally purchased by North Carolina dealers.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	John Sharps, Non-game/Endangered Species Specialist Department of Game, Fish and Parks	State
(605) 394-2391	3305 West South St. Rapid City, South Dakota 75501	South Dakota

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is S.D. Codified Laws Annotated §§34A-8-1 to -12 (endangered species law).

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

Possibly endangered.

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Found only on the eastern border of the State.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Larry Smith, Protection Planner Tennessee Heritage Program Tennessee Department of Conservation 2611 West End Ave. Nashville, Tennessee 37203	State Tennessee

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Executive Order No. 5 (1979). Department of Conservation to implement a voluntary management program for ginseng.

State Registration Requirements: voluntary dealer registration.

State Inspection and Record-Keeping Requirements: voluntary

Number of Dealers Identified by the State: 55 in 1979/80 (44 in-state and 11 out-of state) and 65 in 1980/81 (49 in-state and 16 out-of state).

Ginseng Season: August 15 - December 31

Voluntary Season? yes ☑ no ☐

State's Remarks on Program Effectiveness: Poor response to voluntary reporting system from collectors in the first year. A switch to dealer registration and reporting in the 1979/80 season produced better results. Some out-of-season collection reported.

Reported Price/lb	1977/78:	1978/79: average $108	1979/80: average $99
1980/81: ave. $114	Other:		

Reported Harvest	State Information	FWS Information
1978/79	5,406 lbs. (wild)	
1979/80	9,696 lbs.	3,603 lbs. (wild)
1980/81	11,029 lbs. (wild) + 419 lbs. (cult.)	6,372 lbs. (wild through July '81)

Status of wild ginseng in the State: Possibly threatened (due to commercial exploitation).

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Ginseng was collected in 87 out of the 95 counties in 1978 and 93 out the 95 in 1979.
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	Population sizes vary from fewer than 10 plants to 50-100 plants.
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	Seeds are eaten by mice and squirrels. Squirrels and birds eat the berries. Moles may eat the roots.
6. Vegetative growth and dormancy factors:	
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	600 registered diggers in 1978 but there may be 5,000 to 6,000 diggers in the state. Many diggers collected early in 1979. Heaviest harvesting is in the eastern and central parts of the state.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Research program is underway with 20 sample populations.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Charles W. Johnson, State Naturalist Department of Forests, Parks and Recreation (802) Agency of Environmental Conservation 828-3375 79 River Street Montpelier, Vermont 05602	State Vermont

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑	yes ☐ no ☑

Legal Authority: Possible authority is Vt. Stat. Ann., Title 13, §§3651 to -53 (endangered species law).

State Registration Requirements:

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State:

Ginseng Season: **Voluntary Season?** yes ☐ no ☐

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80		
1980/81		

Status of wild ginseng in the State:

uncommon, perhaps threatened

Current and Past Abundance, Range and Distribution, Including Trends
1. Amount, quality, and distribution of habitat:
2. Statewide abundance and distribution:
3. Trends in amount and quality of available habitat:
Life History and Reproductive Biology
1. Size and age composition of existing populations:
2. Phenology: flowering and fruiting periods:
3. Variation of flower and fruit production as related to plant age:
4. Seed production, dormancy, viability, and dispersion:
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:
6. Vegetative growth and dormancy factors:
Harvest Data and Management
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:
3. Management practices by private landowners and Federal and State officials:

State Contact:	Marshall W. Trammell, Jr., State Supervisor Plant Pest Control Department of Agriculture and Consumer Services P.O. Box 1163 Richmond, Virginia 23209	State
(804) 786-3515		Virginia

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Endangered Plant and Insect Species Act §§3.1-1020 to 3.11030 (1979). Wild ginseng is a threatened species.

State Registration Requirements: Dealers do not need licences but exports must be certified.

State Inspection and Record-Keeping Requirements:

Number of Dealers Identified by the State: 30 in 1979/80

Ginseng Season: August 15 to December 31

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness:
Voluntary system worked well in 1978. Good response to official program in 1979.

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	5,511 lbs.	
1979/80	5,793 lbs.	10,141 lbs. (wild)
1980/81	8,056 lbs. (wild) + 64 lbs. (cult.)	6,497 lbs. (wild through July '81)

Status of wild ginseng in the State:

Listed as "threatened" under the Virginia Act.

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	Research plots showed populations predominantly on 10-45% slopes, in 50% or more shade, and on north or northwest sides of mountains.
2. Statewide abundance and distribution:	
3. Trends in amount and quality of available habitat:	
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	Research plots had few plants with more than 3 prongs.
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	
4. Seed production, dormancy, viability, and dispersion:	
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	
6. Vegetative growth and dormancy factors:	An estimated 25% of plants have tops eaten by browsing deer and cattle.
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Some illegal collecting occurs on federal lands. Some arrests have been made for collecting in the Shenandoah National Park. Age of roots in sample counts was 1 yr. to 26 yrs. Number of roots per pound ranged from 137 to 238 (some roots were broken).
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Research program is underway with 54 one-acre plots in 8 counties.
3. Management practices by private landowners and Federal and State officials:	

State Contact:	Dr. Ronald H. Fortney, Coordinator Natural Heritage Program (304) Department of Natural Resources 348-2707 State of West Virginia Charleston, West Virginia 25305	State West Virginia

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Acts of West Virginia Chapter 158, §28b - illegal to dig ginseng on lands of another in 3 counties without consent; West Virginia Code 20-1-7. Dept. of Natural Resourses to regulate ginseng. Regulations have been issued by the Department of Natural Resources. No authority for cultivated ginseng. §361-3-35 - illegal to dig ginseng on lands of anther without permission.

State Registration Requirements: Delaers must have a permit to buy or sell ginseng.

State Inspection and Record-Keeping Requirements: Dealers must submit annual reports or they may be denied permits in the coming season. Must keep records on amount purchased, price, and other relevant information.

Number of Dealers Identified by the State: 120 in 1979. 95 in 1978.

Ginseng Season: August 1 - November 15 (diggers must plant seeds) **Voluntary Season?** yes ☐ no ☑

State's Remarks on Program Effectiveness:
Overall good success in 1980/81. Some record keeping problems should be solved in the next season.,

Reported Price/lb	1977/78:	1978/79: up to $129	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79	10,110 lbs.	
1979/80	14,994 lbs.	11,005 lbs. (wild)
1980/81	26,053 lbs.	26,487 lbs. (wild through July '81)

Status of wild ginseng in the State:
Decreasing generally but locally common.

Current and Past Abundance, Range and Distribution, Including Trends	
1. **Amount, quality, and distribution of habitat:**	75% of the state is forested and about 7 million acres are oak/hickory forests. Another 2 million acres are northern hardwood forest, making about 10 million acres of potential ginseng habitat.
2. **Statewide abundance and distribution:**	Found in nearly all counties. Most abundant in southern coal fields on steep slopes. Also found in Allegheny Plateau. Common in most counties and restricted in 6 counties out of 55.
3. **Trends in amount and quality of available habitat:**	May be increasing due to abandonment of farms and regrowth of forests.
Life History and Reproductive Biology	
1. **Size and age composition of existing populations:**	Number of plants per stand varies from 1 to over 100.
2. **Phenology: flowering and fruiting periods:**	
3. **Variation of flower and fruit production as related to plant age:**	
4. **Seed production, dormancy, viability, and dispersion:**	
5. **Reproductive success: germination requirements, relation of seed predation to germination and dispersion:**	
6. **Vegetative growth and dormancy factors:**	Sample of collected ginseng showed wide distribution of weight in relation to age of the plants.
Harvest Data and Management	
1. **Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:**	Heavily collected in the State. Heavist harvest is in the southern part of the state. Reported harvest is steadily increasing. Harvest pressure is increasing because of high levels of unemployment.
2. **Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:**	Research program is underway.
3. **Management practices by private landowners and Federal and State officials:**	Removing wild ginseng is prohibited from 276,000 acres of state-owned lands.

State Contact:	Marlin Conrad Department of Agriculture, Trade and Consumer Protection 801 West Badger Rd. Madison, Wisconsin 53713	State Wisconsin
(608) 266-7136		

State Program Approved by Fish & Wildlife Service?	1977/78	1978/79	1979/80	1980/81
	yes ☐ no ☑	yes ☑ no ☐	yes ☑ no ☐	yes ☑ no ☐

Legal Authority: Wisconsin Statutes §29.547 (1979). Regulated issued by Department of Natural Resources, Chapter NR28, §§28.01 to 28.04 of Wisconsin Administrative Code. Possible authority is Wis. Stat. Ann. §29.415 (West)(endangered species law).

State Registration Requirements: Harvest license is required of diggers. $5.00 fee unless on own land. Dealers license required to buy or sell ginseng $100.00 fee.

State Inspection and Record-Keeping Requirements: Dealers must keep records of quantity, name of harvester, and other relevant information.

Number of Dealers Identified by the State: 31 (25 in-state and 6 out-of-state) in 1979/80. 15 in 1980/81 (including 7 in-state and 8 out-of-state).

Ginseng Season: August 15 - November 1

Voluntary Season? yes ☐ no ☑

State's Remarks on Program Effectiveness:

Reported Price/lb	1977/78:	1978/79:	1979/80:
1980/81:	Other:		

Reported Harvest	State Information	FWS Information
1978/79		
1979/80	9,116 lbs. (wild) + 148,323 lbs. (cult)	
1980/81	3,628 (wild) - may be partial number	6.051 lbs. (wild through July '81)

Status of wild ginseng in the State:

not endangered or threatened

- State's Response to FWS Request for State by State Information -

Current and Past Abundance, Range and Distribution, Including Trends	
1. Amount, quality, and distribution of habitat:	
2. Statewide abundance and distribution:	Highest concentration is in the southern hardwood forests of the state. Common in parts of the state, particularly on state-owned lands. Rare in some other localities.
3. Trends in amount and quality of available habitat:	Many habitats are being destroyed by clearing for farms.
Life History and Reproductive Biology	
1. Size and age composition of existing populations:	Plants in harvested populations seen to be younger than those in unharvested populations.
2. Phenology: flowering and fruiting periods:	
3. Variation of flower and fruit production as related to plant age:	2-3 yr. old plants produce some seeds. 4-yr. or older and those with 4 or more prongs produce larger and more fruits.
4. Seed production, dormancy, viability, and dispersion:	On steep slopes, seedlings are found downslope from the older plants. Some seeds are dispersed by birds.
5. Reproductive success: germination requirements, relation of seed predation to germination and dispersion:	Reported seed and fruit predation by ruffed grouse, partridges, blue jays, mice, and chipmunks.
6. Vegetative growth and dormancy factors:	Some heavy grazing by deer. Roots reportedly may be dormant for up to 3 years. Large root size indicators include thick stems & many fruits/plant.
Harvest Data and Management	
1. Collecting pressure, previous season's harvest, trends, number of collectors, collecting effort, quantity of harvested roots, number of roots per pound harvested:	Diggers report that small plants are not harvested. Approx. 2000 diggers in the state. 1,822 [illegible]ggers as of March, 1981.
2. Harvest practices, degree of adherence to traditional harvest techniques, season, age of plants harvested, measures taken to conserve wild plants:	Research program is underway in cooperation with the University of Wisconsin.
3. Management practices by private landowners and Federal and State officials:	

Appendix B

Federal Register Notices Concerning Export of Wild American Ginseng

AMERICAN GINSENG

Data base and discussion. American ginseng is closely related to *Panax ginseng*, a plant whose roots have been used as a panacea (hence the generic name) and an aphrodisiac in the Far East for thousands of years (see 20 and 21). The American plant was discovered in Canada by a Jesuit in the early 18th century after he read of the medicinal qualities attributed to the Asian species (see 22, 23, and 24). Soon after the discovery, the Jesuits began to export the American roots to China.

Exports continued until the middle of the 18th century, when a lot collected out of season was shipped to China without proper drying. This resulted in a distrust of the American product causing the market to crash. However, the export trade was soon picked up by the American colonies as American ginseng was discovered with the expanding settlement of Eastern North America. In 1788, Daniel Boone collected more than 12 tons in what is now West Virginia and Kentucky to sell in Philadelphia.

By the late 19th century, much of the original habitat for American ginseng, hardwood forests, had been cut and more than 150 years of collecting pressure had taken its toll. Depletion of the plant prompted enactment of several Province and State statutes in Canada and the United States, to protect private resources and to establish collecting seasons (e.g., Acts and Joint Resolutions of Virginia 1875–1876, Chapter 90, and Acts of West Virginia, 11th session, 1872–73, Chapter 158). In 1898, Nash (see 25) noted: "It (American ginseng) grew abundantly over large areas in these States (he listed 28), but it has been so energetically hunted, and at the same time the forest area has been so diminished, that the supply is greatly reduced. In Canada it is pretty generally distributed throughout Ontario and Quebec, but it has now become rather scarce."

There is a large volume of botanical literature qualitatively documenting the impact of habitat modification and collecting on American ginseng. In 1848, Asa Gray (see 26), in the first edition of "A Manual of the Botany of the Northern United States", noted that the plant was "not common." Eight years later he noted in the second edition (see 27) that it was "becoming rare." In 1931, Harned (see 28) wrote: "At the present rate of foreign shipment it is only a matter of a short time when wild ginseng will be almost as rare in the United States as it is now in China." Other botanists (see 29, 30, and 31) have commented on the increasing rarity of American ginseng.

To meet the demand for the American roots a boom in commercial cultivation took place in the late 19th century. However, by 1904 overproduction, disease, and the slow growth of the plants (up to 2 years to germinate and 5–7 years to maturity), ruined many of the get-rich-quick ginseng farmers.

Despite the numerous initial difficulties encountered, American gingseng was successfully cultivated and continues to be exported along with roots obtained from the wild. The following table shows total exports in pounds of wild and cultivated plants, average prices per pound in dollars, and total exports in dollars.

Table of Exports of American Ginseng from the United States[1]

Year	Pounds exported	Average price	Total value
1822	153,717	$0.42	$313,943
1841	640,967	.71	427,346
1871	346,677	.84	292,809
1881	114,221	1.04	119,385
1891	338,941	1.65	561,545
1901	283,000	3.39	959,902
1911	149,089	4.28	821,672
1921	153,999	7.08	1,089,202
1931	182,000	8.28	1,507,000
1941	265,000	7.28	1,922,000
1948	129,000	8.51	1,098,000
1951	186,000	12.10	2,251,000
1954	76,989	17.54	1,353,282
1960	112,347	15.28	1,714,191
1961	179,523	18.23	3,281,989
1962	181,000	17.85	2,222,000
1963	141,000	17.60	2,481,000
1964	136,000	20.65	2,844,000
1965	138,000	19.65	2,732,000
1966	116,793	23.72	2,887,310
1967	173,405	25.13	4,358,542
1968	146,135	30.94	4,507,152
1969	133,701	32.61	4,359,524
1970	145,302	33.08	4,433,408
1971	162,689	30.84	5,018,951
1972	168,835	34.51	5,827,289
1973	227,549	39.71	8,922,426
1974	183,136	45.30	8,846,112
1975	216,832	51.27	11,116,787
1976	249,854	50.61	12,596,082
1977 (through May)	299,754	58.93	17,858,435
	51,672	82.39	4,218,640

[1] Export totals from 1954 and 1965–76 are from U.S. Bureau of Census Records (see 32). Average prices were calculated. Export totals and average prices from 1822–64, excluding 1954, are from Hardacre (see 24).

It is important to note that the figures from 1881 to present represent sums of both wild and cultivated roots. Thus the average prices do not indicate the increasing price differences between wild roots and cultivated roots. Prices have traditionally varied with the origin and quality of the roots. The most desirable are the wild roots that are in the shape of a man.

Unfortunately, continuous data are not available to determine the quantities of wild roots exported. In 1974, Patty (see 33 and 34) noted that the U.S. Census of Agriculture reported an 88,600 pound harvest of cultivated American ginseng in 1954 (after 1954, Agriculture did not solicit data on American ginseng production). Thus in 1954, at least 23,747 pounds of wild roots were exported. In the same references, Patty estimated that over half of the roots then being exported were cultivated. In 1976, Patty (see 35) estimated that 65,000 pounds of wild roots were exported in the 1975–76 season.

Almost all of the cultivated and wild American ginseng produced in the United States is exported (see 33 and 36) to the Far East, primarily Hong Kong (see also 32). However, there appears to be a growing domestic market (presumably as a result of the increased interest in natural foods and medicines) (see 37). Much of the domestic market is satisfied by products derived from cultivated *P. ginseng* imported from South Korea. If adequate processing facilities are developed in the United States, cultivated American ginseng could become a larger factor in the domestic market.

The domestic market may never compete with the high prices offered in the Far East for wild American ginseng as long as exports continue. Geczi (see 38) noted that while cultivated roots were priced at $20–$25 a pound in 1970, wild roots were bringing $40–$45. By 1974 wild roots were up to $70 per pound while cultivated were slightly less than the 1970 prices. One dealer stated orally that prices reached $125 per pound for wild American ginseng in the 1975–76 season. Another dealer stated orally that he had not paid less than $86 per pound for roots collected in the summer of 1977. Wild *P. ginseng* has been sold by the individual root for thousands of dollars (see 21, also oral communication with a dealer).

Wild American ginseng appears to be second in desirability only to wild *P. ginseng*. Whereas the market for cultivated ginseng is limited (see 39) and subject to competition from South Korea and other countries (see 33, 34, 35, and 36) there is no reason to suspect that the demand for the wild product will cease (see 21).

Traditionally American ginseng collectors have promoted the conservation of the species by digging only mature plants in the fall, and by planting the seeds (see 40). Often stands have been maintained in the forest (woodsgrown) to ensure a steady yield of roots that would simulate the desirable wild type.

However, Patty (see 34, also 40) noted: "In interviewing representatives of the U.S. trade, it appears that there is scarcity of U.S. supply of ginseng from the wild. The major reason is that gatherers tend to dig roots too early in the season—before seeds have been produced or when the roots are too young. There are also too few plants left for reproduction purposes. The high prices prevailing probably encourage this overgathering."

The ESSA is aware of similar abuses in the summer of 1977. At present large stocks of wild American ginseng are being accumulated by dealers before the plants have had a chance to fruit. It is apparent that voluntary conservation measures are not adhered to in the face of prices approaching $100.00 per pound.

Other factors causing concern for the current status of the American ginseng are the origins of the plants and the legal conditions under which the plants are gathered. Most States have trespass statutes pertaining to the protection of private plant resources. Usually these laws require, at minimum, oral permission from the landowners before wild plants can be removed from private property and in some cases require written documentation for the removal and transport of such plants. The removal of resources from most public lands similarly require written documentation. In addition, wild American ginseng is protected in at least Michigan and New York, and Wisconsin has established a collecting season. Most State officials concede that such protective statutes are difficult to enforce and are not generally adhered to by collectors. Appropriate Federal control of wild American ginseng exports may vitalize the State regulatory mechanisms.

The ESSA has received some information indicating that the number of individuals who collect American ginseng has decreased. Dr. Arnold Krochmal, U.S.D.A. Forest Service (see 41), among others, has commented that many Appalachians who traditionally collected American ginseng have moved to urban areas. Although such migrations may lessen collecting pressure in certain areas, they may or may not alleviate overall collecting pressure. In Ohio, recent Appalacian emigrants are reported to be the primary collectors. It also has been suggested that collectors are decreasing because young people do not take up the practice.

In assessing the status of the American ginseng the ESSA has relied heavily on qualitative and quantitative information in the literature, and data and opinions from professional botanists, State officials, persons involved in the ginseng trade, and other interested persons. Detailed knowledge of the distribution and population sizes of American ginseng is not available except for a few States, such as Maine, where the plant apparently has been practically extirpated.

The ESSA is aware that opinions of the plant's status vary with field experience. For example, professional botanists may be less familiar with the plant and its habitat than collectors and may be more inclined to consider the plant rare.

State lists of endangered, threatened, rare, or otherwise specially designated species are noted herein when it was known whether they included or excluded American ginseng. Most of these lists were compiled by one or more professional botanists; however, it is obvious that the content of such lists and their meaning vary depending on the expertise, experience, and the intent of the author(s). Thus, such lists and the terms used must be examined critically. (For a more thorough discussion of the problems involved in compiling such lists and the use of the descriptive terms, see 42.) In addition, although these lists are often produced by State agencies, they have

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varying legal meaning. When known, legal implications will be noted along with State statutes that require written documentation for the collection of American ginseng (excluding general laws pertaining to public lands).

As previously discussed, the MA has been issuing permits for the export of wild American ginseng under the conditions specified in 42 FR 40979.

Numerous applications for permits specified the States from which roots were to be obtained. Although these applications are referred to in the State summaries, they are only referenced to indicate that the State is a commercial source.

Finding. The ESSA is unable to find that the export of American ginseng collected in the wild, except in Michigan, during the 1977–78 season after the date of this notice will not be detrimental to the survival of the species. American ginseng may be relatively abundant in some sections of some States. However, the ESSA has no alternative to this finding, in view of the overall decline in the abundance of this plan, the sustained market demand, increasing prices, continuing habitat modification, general lack of management programs or regulatory mechanisms to promote its conservation, and, most importantly, the lack of any positive evidence that the plant will not further decline because of continued export.

The ESSA is sensitive to the fact that many of the people who collect American ginseng are indigent. However, it should be clear that sustained, uncontrolled harvests of the plant cannot continue forever. As was previously discussed, there is no reason to suspect that the market for wild American ginseng will not continue. Thus the ESA urges the States to establish conservation programs and regulatory mechanisms that will enable the ESSA to modify this or future findings. The ESSA is willing to assist the States (as appropriate and within its means) in developing suitable conservation programs and regulatory mechanisms.

For the State of Michigan, the ESSA finds that export of American ginseng collected in the wild after the date of this notice in the 1977–78 season, within the State and in compliance with State law, will not be detrimental to the survival of the species. This finding results primarily from the development of a promising regulatory program by the State, for the purposes of establishing the plant's status and monitoring its harvest, to be elaborated on in the State's analysis below. However, approval of export may be withdrawn at any time, and all shipments must be accompanied by copies of Michigan permits, accounting for all roots.

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BIBLIOGRAPHY

1. Bailey, T. N. 1974. Social Organization in a Bobcat Population. Journal of Wildlife Management. 38(3): 435–446.

2. Provost, E. E., C. A. Nelson, and A. D. Marshall, 1973. Population Dynamics and Behavior in the Bobcat. In The World's Cats. R. L. Eaton (Editor). World Wildlife Safari. Winston, OR. p. 42–67.

3. Crowe, D. M. 1975. A Model for Exploited Bobcat Populations in Wyoming. Journal of Wildlife Management. 39(2): 408–415.

4. Defenders of Wildlife. 1977. Petition for Classification of the Bobcat (*Lynx rufus*) under the Endangered Species Act of 1973.

5. Young, S. E. 1958. The Bobcat of North America. The Stackpole Company. Harrisburg, Pa. 193 pp.

6. Caroline, M. 1976. Animal Damage Control Annual Report for Texas. U.S. Fish and Wildlife Service.

7. Linhart, S. B. and W. B. Robinson. 1972. Some Relative Carnivore Densities in Areas Under Sustained Coyote Control. Journal of Mammalogy. 53(4): 880–884.

8. Ebert, P. W. 1971. The Status and Management of the Felids in Oregon. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 68–71.

9. Anderson, L. 1976. The Bobcat—What is the Status of Our Most Valuable Furbearer? South Dakota Conservation Digest. 43(6): 16–17.

10. Sweeney, S. J. 1977. An Analysis of Bobcat Bounty, Hunter, and Trapper Harvest Records for Washington State, 1935–76: Implications for Future Management of the Bobcat Harvest in Washington. Unpublished Manuscript.

11. Elton, C. and M. Nicholson. 1942. The Ten Year Cycle in Numbers of the Lynx in Canada. Journal of Animal Ecology 11: 215–244.

12. Berrie, P. M. 1973. Ecology and Status of the Lynx in Interior Alaska. In The World's Cats. R. L. Eaton (Editor). World Wildlife Safari. Winston, OR. p. 4–41.

13. Brand, C. J., L. B. Keith, and C. A. Fischer, 1976. Lynx Responses to Changing Snowshoe Hare Densities in Central Alberta. Journal of Wildlife Management. 40(3): 416–428.

14. Berrie, P. M. Letter dated 17 July 1977. Fairbanks, Alaska.

15. Burris, O. 1971. Lynx Management in Alaska. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 29–33.

16. Fur Resources Committee of the International Association of Fish and Wildlife Agencies. 1977. Questionnaires to States, 1970–71 through 1975–76. Unpublished data.

17. Barbour, R. W. and W. H. Davis. 1974. Mammals of Kentucky. University of Kentucky Press. Lexington, KY. 322 pp.

18. Kennelly, J. J. and R. L. Applegate (Editors). 1976. Cooperative Research Unit, Fishery and Wildlife Annual Report, 1974–75. U.S. Department of the Interior.

19. McDaniel, J. 1963. Investigation of Non-Game Species. Florida Management Area Research. Project No. W-41-R-10. Job No. 5-A. (Procedure 4).

20. Lewis, W. H. 1977. Medical Botany Plants Affecting Man's Health. John Wiley and Sons, Inc. New York, NY. 515 pp.

21. Massey, J. S. 1976. Ginseng, Folklore Cure-all is Being Regarded Seriously. Smithsonian. 6(11): 104–111.

22. Kimmens, A.C. 1975. Tales of the Ginseng. William Morrow and Co., Inc. New York, NY. 208 pp.

23. Embodden, W. A. 1974. Bizarre Plants Magical, Monstrous, Mythical. MacMillan Publishing Co., Inc. New York, NY. 214 pp.

24. Hardacre, V. 1968. Woodland Nuggets of Gold; the Story of American Ginseng Cultivation. Vantage Press. New York, NY. 304 pp.

25. Nash, G. V. 1898. American Ginseng: Its Commercial History, Protection, and Cultivation. United States Department of Agriculture Bulletin No. 16—Revised Edition. 32 pp.

26. Gray, A. 1848. A Manual of the Botany of the Northern United States. James Monroe and Co. Boston and Cambridge, MA. John Chapman. London. 710 pp.

27. Gray, A. 1856. A Manual of the Botany of the Northern United States. George P. Putman and Co. New York, NY. 799 pp.

28. Harned, J. E. 1931. Wild Flowers of the Alleghanies. Privately Published. Oakland, MD. 670 pp.

29. Small, J. K. 1933. Manual of the Southeastern Flora. Privately Published. New York, NY. 1554 pp.

30. Gleason, H. A. and A. Cronquist. 1963. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. D. Van Nostrand Co. New York, NY. 810 pp.

31. Rickett, H. W. 1965. Wild Flowers of the United States. Vol. 1. Pt. 1. The New York Botanical Garden and McGraw-Hill Book Company. New York, NY. 230 pp.

32. U.S. Bureau of the Census. 1909–. Schedule B. Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

33. Patty, G. E. 1974. Demand Spurs U.S. Exports of Ginseng to Asia. Foreign Agriculture. 12(46): 11 and 16.

34. ——— 1974. U.S. Ginseng in the Far East Market. FASM-261. U.S.D.A. Foreign Agriculture Service. 11 pp.

35. ——— 1976. New Developments in U.S. Ginseng. Unpublished Manuscript. 9 pp.

36. ——— 1976. Orient Prizes Quality U.S. Ginseng Exports. Foreign Agriculture. 14(20): 12.

37. Anonymous. 1977. Now You Can Take Part in the Ginseng Research Project. (Advertisement). Lady's Circle. 14(1): 65.

38. Geczi, M. L. 1975. Lowly Ginseng Plant is One Root to Profit for Some Americans. The Wall Street Journal. 186(49): 10.

39. Williams, L. 1973. Growing Ginseng. United States Department of Agriculture Farmer's Bulletin No. 2201. 8 pp.

40. Wigginton, E. (Editor). Ginseng. In Foxfire 3. Anchor Press. New York, NY. pp. 245–273.

41. Krochmal, A. Letter dated 26 May 1976. U.S.D.A. Forest Service.

42. Dumond, D. M. 1973. A Guide for the Selection of Rare, Unique, and Endangered Plants, Castanea. 38(4): 387–395.

43. Jenkins, J. H. 1971. The Status and Management of the Bobcat and Cougar in the Southeastern States. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 86–91.

44. Mohr, C. 1890. The Medicinal Plants of Alabama. Privately Published. Mobile, AL. 17 pp.

45. Mohr, C. T. 1901. Plant Life of Alabama. Reprint. Contributions from the U.S. National Herbarium Vol. 6. United States Department of Agriculture. Montgomery, AL. 921 pp.

46. Delcourt, H. R. and P. A. Delcourt. 1975. The Bluffiands: Pleistocene Pathway into the Tunica Hills. American Midland Naturalist. 94(2): 385–400.

47. Thomas, J. L. 1976. Plants. In Endangered and Threatened Plants and Animals of Alabama. University of Alabama. University, AL. 93 pp.

48. Anonymous. 1966. Status of the Fur Industry in Alaska. Alaska Wildlife Investigations. Federal Aid in Wildlife Restoration Projects W-6-R-7 and W-13-R-1. Job No. 1 (W-13-R-1). Period covered: October 1, 1965–June 30, 1966.

49. Small, R. L. 1971. Interspecific Competition Among Three Species of Carnivors on the Spider Ranch, Yavapai Co., Arizona. M. S. Thesis. University of Arizona. Tucson, AZ. 78 pp.

50. Crow, C. T. 1974. Arkansas Natural Area Plan. Arkansas Department of Planning. Little Rock, AR. 248 pp.

51. Smith, E. B. Letter dated 11 July 1977. University of Arkansas.

52. Tucker, G. Letter dated 26 July 1977. Arkansas Tech University.

53. Crocket, J. J. Letter dated 18 July 1977. Oklahoma State University.

54. Woodstream Corporation. 1977. Trapping Laws and Regulations. Vol. I and II. Lititz, PA.

55. Sandfort, W. W. and R. V. Tully. 1971. Status and Management of the Mountain Lion and Bobcat in Colorado. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 72–85.

56. Dowhan, J. J. and R. J. Craig. 1976. Rare and Endangered Species of Connecticut and Their Habitats. Department of Environmental Protection Report of Investigations, No. 6. The Natural Resources Center. State Geological and Natural History Survey of Connecticut. Hartford, CT. 137 pp.

57. Alexander, H. L., Jr. Letter dated 2 August 1977. Delaware Department of Natural Resources and Environmental Control.

58. Tatnall, R. R. 1946. Flora of Delaware and the Eastern Shore. The Society of Natural History of Delaware. 313 pp.

59. Golley, F. B. 1962. Mammals of Georgia. University of Georgia Press. Athens, GA. 218 pp.

60. McCollum, J. Letter dated 25 July 1977. Georgia Department of Natural Resources.

61. Kartesz, J. T. and R. Kartesz. 1977. The Biota of North America Part 1: Vascular Plants. Volume I: Rare Plants. Biota of North America Committee. Pittsburgh, PA. 361 pp.

62. Georgia Botanical Society. 1973. Rare and Endangered Plant Species of Georgia. Unpublished List. 1 p.

63. McCollum J. L. (Editor). 1974. Endangered Species of Georgia. Georgia Department of Natural Resources. Atlanta, GA. 66 pp.

64. Mellinger, M. B. 1973. Georgia's Rare and Endangered Wildflowers. The Georgia Conservancy Magazine. Summer. p. 5.

65. Nellis, C. H. 1971. The Lynx in the Northwest. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 23–28.

66. Patterson, H. N. 1876. Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Illinois. University of Illinois Press. Urbana, IL. 54 pp.

67. Jones, G. N. and G. D. Fuller. 1955. Vascular Plants of Illinois. Native and Introduced. Spectator Print. Oquawka, IL. 593 pp.

68. Sheviak, C. Letter dated 18 July 1977. Natural Land Institute.

69. Mohlenbrock, D. H. and J. W. Voigt. 1959. A Flora of Southern Illinois. Southern Illinois University Press. Carbondale, IL. 390 pp.

70. Faulkner, C. E. 1971. The Legal Status of the Wildcats in the United States. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 123–125.

71. Coulter, S. 1900. A Catalogue of the Flowering Plants and of the Ferns and Their Allies Indigenous to Indiana. Reprinted from Indiana Department of Geology and Natural Resources Report, 1899. Indianapolis, IN. p. 554–1002.

100

72. Deam, C.C. 1940. *Flora of Indiana.* Indiana Department of Conservation, Division of Forestry. Indianapolis, IN. 1236 pp.

73. Feldt, C. Correspondence dated 29 December 1976. Indiana Department of Natural Resources.

74. Newsom, M. Letter dated 2 December 1976. Indiana Department of Natural Resources.

75. Gray, L. M. Letter dated 8 November 1976. Indiana Department of Natural Resources.

76. Irbe, A. Letter dated 19 July 1977. Danville, IA.

77. Fitzpatrick, T. J. 1899. Manual of the Flowering Plants of Iowa Part 1 Polypetalae. Privately published. Lammoni, IA. 69 pp.

78. Mitchell, A. L. Letter dated 8 August 1977. Kentucky Department of Fish and Wildlife Resources.

79. Braun, E. L. 1943. An Annotated Catalog of Spermatophytes of Kentucky. John S. Swift Co., Inc. Cincinnati, NY. etc. 161 pp.

80. Wharton, M. E. and R. W. Barbour. 1971. A Guide to the Wildflowers and Ferns of Kentucky. University Press of Kentucky. Lexington, KY. 344 pp.

81. Babcock, J. V. 1977. Endangered Plants and Animals of Kentucky. University of Kentucky. Lexington, KY. 128 pp.

82. O'Neill, T. and G. Linscombe. 1976. The Fur Animals, the Alligator and the Fur Industry. Louisiana Wildlife and Fisheries Commission. 66 pp.

83. Lowry, G. H., Jr. 1974. The Mammals of Louisiana and its Adjacent Waters. Louisiana State University Press. 565 pp.

84. Curry, M. G. Letter dated 14 July 1977. VTN Louisiana, Inc.

85. Allen, M., M. G. Curry, and B. F. Martin. 1976. A Vascular Flora of St. Helena and West Feliciana Parishes, Louisiana. The University of Southwestern Louisiana Research Series No. 39 Biology. 80 pp.

86. Hunt, J. H. No date. Bobcat Management Plan. Maine Department of Inland Fisheries and Wildlife. Augusta, ME. Unpublished Report.

87. Grambel, F. Memorandum dated 3 March 1977. State Supervisor, U.S. Fish and Wildlife Service.

88. Hurley, Jr. F. B. Letter dated 4 August 1977. Maine Department of Inland Fisheries and Wildlife.

89. Hunt, J. H. No date. Otter Management Plan. Maine Department of Inland Fisheries and Wildlife. Augusta, ME. Unpublished Report.

90. Eastman, L. M. 1976. Ginseng, Panax quinquefolius L., in Maine and its Relevance to the Critical Areas Program. Maine State Planning Office, Planning Report No. 16. Augusta, ME. Unpublished Report.

91. Bean, R. C., C. D. Richards, and F. Hyland. 1966. Checklist of the Vascular Plants of Maine. (Revised Edition). Bulletin of the Josselyn Botanical Society, No. 8. 71 pp.

92. Shreve, F., M. A. Chrysler, F. H. Blodgett, and F. W. Beasley. 1910. The Plant Life of Maryland. The Johns Hopkins Press. Baltimore, MD. 533 pp.

93. Dewey, C. 1840. Report on the Herbaceous Flowering Plants of Massachusetts. The Commissioners on the Zoological and Botanical Survey of the State. 277 pp.

94. Tuckerman, E. and C. Frost. 1875. A Catalogue of Plants Growing Without Cultivation Within Thirty Miles of Amherst College. Edwin Nelson. Amherst, MA. 98 pp.

95. Jackson, J. 1883. Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Worcester County Massachusetts. Natural History Society. Worcester, MA. 48 pp.

96. Stone, G. E. 1913. A List of Plants Growing Without Cultivation in Franklin, Hampshire, and Hampton Counties, Massachusetts. Press of Carpenter and Morehouse. Amherst, MA. 72 pp.

97. Burt, W. H. 1946. The Mammals of Michigan. University of Michigan Press. Ann Arbor, MI. 288 pp.

98. Wheeler, C. P. and E. P. Smith. 1881. Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Michigan. W. S. George and Co. Lansing, MI. 105 pp.

99. Beal, W. J. and C. F. Wheeler. 1892. Michigan Flora. Robert Smith and Co. Lansing, MI. 180 pp.

100. Smith, H. V. 1961. Michigan Wildflowers. Cranbrook Institute of Science. Bloomfield Hills, MI. 465 pp.

101. Wagner, W. H., E. G. Voss, J. H. Beaman, E. A. Bourdo, F. W. Case, J. A. Churchill, and P. W. Thompson. 1977. Michigan's Endangered and Threatened Species Program. Endangered, Threatened, and Rare Vascular Plants in Michigan. The Michigan Botanist. 16: 99–110.

102. Minnesota Department of Natural Resources. 1975. Animals and Plants Which Merit Special Consideration and Management . . . the Uncommon Ones. 32 pp.

103. Upham, W. 1884. Catalogue of the Flora of Minnesota. In The Geological and Natural History Survey of Minnesota, Part VI. Johnson, Smith, and Harrison. Minneapolis, MN. 193 pp.

104. MacMillan, C. 1892. The Metaspermae of the Minnesota Valley. Geological and Natural History Survey of Minnesota. Reports of the Survey, Series I. Minneapolis, MN. 826 pp.

105. Morley, T. 1969. Spring Flora of Minnesota. University of Minesota Press. Minneapolis, MN. 283 pp.

106. Monserud, W. and G. B. Ownbey. 1971. Common Wild Flowers of Minnesota. University of Minnesota Press. Minneapolis, MN. 331 pp.

107. Henderson, C. L. Letter dated 1 August 1977. Minnesota Department of Natural Resources.

108. Lowe, E. N. 1921. Plants of Mississippi: A List of Flowering Plants and Ferns. Mississippi State Geological Survey Bulletin 17. 292 pp.

109. Pullen, T. M. 1975. Rare and Endangered Plant Species in Mississippi. A Preliminary Unpublished List. 2 pp.

110. Noren, C. R. Letter dated 4 August 1977. Missouri Department of Conservation.

111. Tracy, S. M. 1888. Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Missouri. Tribune Printing Co. Jefferson City, MO. 106 pp.

112. Steyermark, J. A. 1963. Flora of Missouri. The Iowa State University Press. Ames, IA. 1725 pp.

113. Holt, F. T., J. F. Keefe, W. H. Lewis, W. L. Flieger, and M. H. Sullivan. 1974. Rare and Endangered Species of Missouri. Missouri Department of Conservation and U.S.D.A. Soil Conservation Service. 79 Unnumbered Pages.

114. Wylie, J. E. Letter dated 28 July 1977. Missouri Department of Conservation.

115. Brohn, A. Letter dated 9 August 1977. Missouri Department of Natural Resources.

116. Montana Department of Fish and Game. 1977. Bringing the Bobcat Back. In The Catchall. Montana Outdoors. 8(3): 11–12.

117. Hoffman, R. S., P. L. Wright, and F. C. Newby. 1969. Distribution of Some Mammals in Montana. I. Mammals Other Than Bats. Journal of Mammalogy. 50(3): 579–604.

118. Pound, R. and E. Clements. 1900. The Phytogeography of Nebraska. I. General Survey. Second Edition. University of Nebraska. Lincoln, NE. 442 pp.

119. Winter, J. M. 1936. An analysis of the Flowering Plants of Nebraska. The Botanical Survey of Nebraska. New Series Number X. 203 pp.

120. Twedt, C. M. Letter dated 14 July 1977. Nebraska Game and Parks Commission.

121. Pease, A. S. 1924. Vascular Flora of Coos County, New Hampshire. Proceedings of the Boston Society of Natural History. 37: 39–388.

122. Ryden, H. 1976. Goodbye to the Bobcat? Reader's Digest. 109(655): 233–239.

123. Britton, N. L. 1889. Catalogue of Plants Found in New Jersey. From Final Report of the State Geologist. Vol. II. John L. Murphy Publishing Co. Trenton, N.J. 642 pp.

124. Fairbrothers, D. E. and M. Y. Hough. 1973. Rare or Endangered Vascular Plants of New Jersey. New Jersey State Museum Science Notes, No. 14. 53 pp.

125. Porcella III, S. Letter dated 18 July 1977. New Jersey Department of Environmental Protection.

126. Findley, J. S., A. H. Harris, D. E. Wilson, and C. Jones. 1975. Mammals of New Mexico. University of New Mexico Press. Albuquerque, N.M. 360 pp.

127. House, H. D. 1924. Annotated List of the Ferns and Flowering Plants of New York State. University of the State of New York Museum Bulletin No. 254. 759 pp.

128. Zander, R. H. 1976. Floristics and Environmental Planning in Western New York and Adjacent Ontario. Occasional Papers of the Buffalo Society of Natural Sciences No. 1. Buffalo, N.Y. 47 pp.

129. Radford, A. E., H. E. Ahles, and C. R. Bell. 1964. Guide to the Vascular Flora of the Carolinas. University of North Carolina. Chapel Hill, N.C. 383 pp.

130. Hardin, J. W. 1977. Vascular Plants. In Endangered and Threatened Plants and Animals of North Carolina. J. E. Cooper, S. S. Robinson, and J. B. Funderburg (Editors). North Carolina State Museum of Natural History. Raleigh, N.C. In Press.

131. Curtis, M. A. 1867. Botany; Containing a Catalogue of the Indigenous and Naturalized Plants of the State. Geological and Natural History Survey of North Carolina. Part III. 156 pp.

132. Hardin, J. W. 1968. Commercial Herbs, Roots and Pollens of North Carolina. Agricultural Station North Carolina State University Bulletin 435. Raleigh, N.C. 76 pp.

133. Bogue, C. 1975. The Plants. In Ginseng. E. Wigginton (Editor). Foxfire 3. Anchor Press. New York, NY. p. 245–273.

134. Adams, A. W. 1961. Furbearers of North Dakota. State Game and Fish Department. Bismarck, ND. 102 pp.

135. Smith, H. G., R. K. Burnhard, E. E. Good, and J. M. Keener. 1973. Rare and Endangered Vertebrates of Ohio. Ohio Journal of Science. 73(5): 257–271.

136. Schaffner, J. A. 1914. Ohio Biological Catalog of Ohio Vascular Plants, Ohio State University Bulletin. 1(2): 247 pp.

137. Lea, T. G. 1849. Catalogue of Plants, Native and Naturalized, Collected in the Vicinity of Cincinnati, Ohio During the Years 1834–1844. T. K. and P. G. Collins. Philadelphia, PA. 77 pp.

138. Wright, A. A. 1889. Preliminary List of the Flowers and Fern Plants of Lorain County, Ohio. E. J. Goodrich. Oberlin, OH. 30 pp.

139. Schaffner, J. H. 1932. Revised Catalog of Ohio Vascular Plants. Ohio State University Bulletin. 36(9): 215 pp.

140. Anderson, D. Letter dated 20 July 1977. Ohio Natural Heritage Program.

141. Wistendahl, W. A., J. D. Wistendahl, and K. P. Lewis. No date. Rare and Endangered Plant Species of the Central Ohio Valley; A Contribution Toward a Comprehensive List for Ohio. Unpublished List. 22 pp.

142. Cooperrider, T. S. 1975. Preliminary List of Rare and Endangered Species in Ohio—Dicotyledoneae. Unpublished List. 8 pp.

143. Crockett, J. J. Letter dated 18 July 1977. Oklahoma State University.

101

144. Lewis, J. C., J. L. Crockett, F. J. Fortney, B. P. Glass, J. Miller, A. Moore, H. W. Robison, N. E. Smola, E. C. Snook, J. L. Teate, and R. J. Tyrl. 1975. Rare and Endangered Vertebrates and Plants of Oklahoma. U.S.D.A. Soil Conservation Service. 44 pp.

145. Noll, H. R. 1852. The Botanical Class-Book and Flora of Pennsylvania. O. N. Worden, Printer. Lewisburg, PA. 452 pp.

146. Darlington, W. 1837. Flora Cestrica. Published Privately. West-Chester, PA. 640 pp.

147. Miller, J. 1923. Flora of Erie County, Pennsylvania. Rochester, PA. 47 pp.

148. Stone, H. E. 1945. A Flora of Chester County, Pennsylvania. The Academy of Natural Sciences. 640 pp.

149. Schaeffer, R. L. 1949. The Vascular Flora of Northampton County Pennsylvania, University of Pennsylvania, PA 702 pp.

150. Marshall, A. D. and J. H. Jenkins. 1966. Movements and Home Ranges of Bobcats as Determined by Radio-Tracking in the Upper Coastal Plain of West Central South Carolina. In Proceedings of the 20th Annual Conference Cooperative Wildlife Disease. p. 206–214.

151. Timerman, J. A. Letter dated 5 August 1977. South Carolina Wildlife and Marine Resource Department.

152. Stansell, S. B. 1977. Letter dated 19 July 1977. South Carolina Wildlife & Marine Resources Department.

153. Gattinger, A. 1887. The Tennessee Flora with Special Reference to the Flora of Nashville. Privately Published. 109 pp.

154. ———. 1901. The Flora of Tennessee and a Philosophy of Botany. Gospel Advocate Publishing Co. Nashville, TN. 296 pp.

155. Sharp, A. J. 1974. Rare Plants of Tennessee. The Tennessee Conservationist. 40(7): p. 20–21.

156. Collins, J. L., H. R. DeSelm, A. M. Evans, R. Kral, B. E. Wofford. No date. The Rare Vascular Plants of Tennessee. Unpublished Manuscript. 26 pp.

157. Russell, D. N. 1971. History and Status of the Fields of Texas. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 53–58.

158. Brainerd, E., L. R. Jones, and W. W. Eggleston. 1900. Flora of Vermont. Contributions to the Botany of Vermont, 8. 113 pp.

159. Flynn, N. P. Flora of Burlington and Vicinity. Contributions of Botany of Vermont, 9. 124 pp.

160. Seymour, F. C. 1969. The Flora of Vermont. Fourth Edition. Agricultural Experiment Station Bulletin 660. The University of Vermont. Burlington, VT. 393 pp.

161. Massey, A. B. 1961. Virginia Flora. Virginia Agricultural Experiment Station Technical Bulletin 155. Blacksburg, VA. 258 pp.

162. Harvill, A. M. 1970. Spring Flora of Virginia. McClain Printing Company. Parsons, WV. 240 pp.

163. Core, E. L. 1950. A Checklist of the Vascular Plants of West Virginia. West Virginia University, Morgantown, WV. 71 pp.

164. Strausbaugh, P. D. and E. L. Core. 1958. Flora of West Virginia, Part 3. West Virginia University Bulletin. Series 58. No. 12–3. p. 571–1075.

165. Pike, D. E. Letter dated 19 July 1977. West Virginia Department of Natural Resources.

166. Core, E. L. No date. Rare and Endangered Plant Species in West Virginia. West Virginia Department of Agriculture. Charleston, WV. 7 pp.

167. Jackson, H. H. T. 1961. Mammals of Wisconsin. University of Wisconsin Press. Madison, WI. 504 pp.

168. Creed, W. A. and J. E. Ashbrenner. 1976. Status Report on Wisconsin Bobcats, 1975. Department of Natural Resources Research Report 87. Madison, WI.

169. Earl, A. E. Letter dated August 8, 1977. Wisconsin Department of Natural Resources.

170. Keener, J. M. 1971. The Status and Management of the Bobcat and Canada Lynx in Wisconsin. In Proceedings of a Symposium on the Native Cats of North America—Their Status and Management. S. E. Jorgensen and L. D. Mech (Editors). 36th North American Wildlife and Natural Resources Conference. Portland, OR. p. 34–36.

171. Knudsen, G. J. 1956. Preliminary Otter Investigations. State of Wisconsin Project No. W–79–R–1 (Phase E). Job No. I–A.

172. Wisconsin Department of Natural Resources. Otter in Wisconsin. Unpublished Report. Madison, WI. 16 Unnumbered Pages.

173. Fassett, N. C. 1938. Spring Flora of Wisconsin. Democrat Printing Co. Madison, WI. 176 pp.

174. Lapham, I. A. 1849. Plants of Wisconsin. Reprinted from Proceedings of the American Association of Science. p. 19–62.

175. Swezey, G. D. 1877. Catalogue of the Exogenous, Endogenous, and Acrogenous Plants of Wisconsin. Beloit Free Press Print. Bloit, WI. 32 Unnumbered Pages.

176. Read, R. H. 1976. Endangered and Threatened Vascular Plants in Wisconsin. Scientific Areas Preservation Council Technical Bulletin No. 92. Wisconsin Department of Natural Resources. 58 pp.

177. Read, R. H. Memorandum dated 1 August 1977. Wisconsin Department of Natural Resources.

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TABLES: AMERICAN GINSENG

The following tables summarize by State the information concerning American ginseng received by the U.S. Fish and Wildlife Service and the ESSA. Only those States where the plant has been known to occur are listed. Many States have recently initiated programs to better establish the status of this species, to monitor its harvest, and, in some cases, to manage its harvest. Without such State programs it is doubtful that adequate information would be available to support approval of export by the ESSA.

Description of the table categories follow, along with explanations of abbreviations used. More detailed State-by-State summaries of comments are available from the ESSA.

State classification. Most States have trespass statutes pertaining to the protection of private and public plant resources. At minimum these laws usually require oral permission from private landowners or written permission from State officials before the resources may be removed. Although these statutes may be applied toward conserving American ginseng, they were not considered in determining the State classifications. The State classifications are based on State statutes, regulatory authorities, or initiatives specifically concerned with American ginseng.

C=Conserved: A State agency has implemented or has initiated a program to help conserve American ginseng even though the State agency has no express regulatory authority.

R=Regulated: A State agency has regulatory authority to conserve American ginseng.

U=Unregulated: No State agency has regulatory authority or has initiated a program to conserve American ginseng.

Reported harvest. Few States have even gross estimates of the size of past harvest. The estimates included in the tables are based on voluntary dealer surveys (DS), which may include roots purchased from other dealers as well as those roots purchased from collectors.

State population. A sampling of qualitative opinions concerning American ginseng's abundance and status in the States is provided in the tables. Few of these opinions are supported by data. Missouri is the only State which has estimated the size of its American ginseng population.

As discussed in our August 30, 1977 FEDERAL REGISTER notice (42 FR 43729), qualitative opinions concerning the plant's abundance and status must be viewed critically. Such terms as endangered, rare, and stable are often used imprecisely, without guidelines or criteria. In addition, the plant's status undoubtedly varies with local conditions, further complicating any evaluation of its status and abundance.

In the tables, information concerning American ginseng's status and abundance is followed by a brief explanation as to how those determinations were made. In some cases, no grounds for a qualitative opinion were given so no explanation is provided in the "How Determined" column. When available, grounds are stated with the following abbreviations:

B=Biologists' opinions: Either an opinion expressed by a biologist to U.S. Fish and Wildlife Service or the ESSA, or an opinion expressed by one or more biologists which was cited as a basis for a State comment or a State endangered species list.

CC=Collectors' comments: Comments from collectors received by the U.S. Fish and Wildlife Service or the ESSA.

FO=Field observations: Included when field observations were specifically referred to as a basis for the determination.

HR=Herbarium records: Based on information recorded with herbarium specimens.

LS=Literature survey: Based on information in the literature.

SC=Survey of collectors: State Survey of American ginseng collectors in the affected State.

SD=Survey of dealers: State survey of American ginseng dealers who purchased roots harvested in the affected State.

Findings and conditions for 1978 season. The ESSA's proposed findings concerning export of roots from the 1978 collecting season are given here. As has been indicated for the furbearers, these proposed findings are subject to change as further information is received, and final findings will be published about September 1. The proposed findings are abbreviated as:

A=Approved: Export is approved for roots legally harvested during the 1978 season. The ESSA considers that harvest in the State will not be detrimental to the survival of the species in that State. Roots must be documented as to State of origin and season of collecting.

NEA=No export approved: Several States not approved anticipate providing additional information which may support approval of export of the 1978 harvest.

Comments. Other information relevant to the finding is given here.

Footnotes for American Ginseng Tables

1. Thomas, J. L. 1976. Plants. In "Endangered and Threatened Plants and Animals of Alabama." University of Alabama. University, Ala. 93 pp.
2. Letter from Governor George C. Wallace dated October 18, 1977.
3. Tucker, G. E. 1974. Threatened Native Plants of Arkansas. In *Arkansas Natural Area Plan.* Arkansas Department of Planning. Little Rock, Ark. p. 39-65.
4. Barkley, S. January 6, 1978. Public Input Received In Response To Proposed Listing Of American Ginseng (Panax quinquefolius) As A Federally-Endangered Or Threatened Species. Unpublished report. Arkansas Game and Fish Commission. 6 pp.
5. Dowhan, J. J. Status Report: Ginseng. Unpublished report. 4 pp.
6. Dowhan, J. J. and R. J. Craig. 1976. Rare and Endangerd Species of Connecticut and Their Habitats. Department of Environmental Protection. Report of Investigations, No. 6. The Natural Resources Center. State Geological and Natural History Survey of Connecticut. Hartford, Conn. 137 pp.
7. Oral statement by Dr. C. W. Dunham, University of Delaware.
8. Letter dated March 9, 1978 from H. G. Alexander, Jr., Delaware Department of Natural Resources and Environmental Control.
9. McCollum, J. L. (Editor). 1974. "Endangered Species of Georgia." Georgia Department of Natural Resources. Atlanta, Ga. 66 pp.
10. Mohlenbrock, D. H. and J. W. Voigt. 1959. *A Flora of Southern Illinois.* Southern Illinois University Press. Carbondale, Ill. 390 pp.
11. Letter dated September 7, 1978 from J. Schwegman, Illinois Department of Conservation.
12. Memorandum, semi-final list of Endangered and Threatened Plants, dated January 18, 1978 by C. J. Sheviak, Director, Endangered Plants Project, Illinois Natural Land Institute.
13. Correspondence dated December 29, 1976 from R. D. Feldt, Indiana Department of Natural Resources.
14. Letter dated October 4, 1977 from J. D. Cloud, Indiana Department of Natural Resources.
15. Information supplied by the State of Kentucky at the May 1, 1978 hearing in Washington, D.C.
16. Letter dated May 26, 1977 from A. Krochmal, U.S.D.A. Forest Service.
17. Kartesz, J. T. and R. Kartesz. 1977. *The Biota of North America* Part 1: *Vascular Plants.* Volume I: *Rare Plants.* Biota of North America Committee. Pittsburgh, Pa. 361 pp.
18. Letter dated September 7, 1977 from R. Cranfill, University of Kentucky.
19. Letter dated September 29, 1977 from W. H. Martin, Eastern Kentucky University.
20. Babcock, J. V. 1977. *Endangered Plants and Animals of Kentucky.* University of Kentucky. Lexington, Ky. 128 pp.
21. Letter dated July 14, 1977 from Mary Curry, VTN Louisiana Inc.
22. Eastman, L. M. 1976. Ginseng, *Panax quinquefolius* L., in Maine and its relevance to the Critical Areas Program. Maine State Planning Office, Planning Report No. 16. Augusta, Maine Unpublished Report.
23. Letter dated October 7, 1977 from W. Jabine II, Maryland Department of Natural Resources.
24. Letter dated November 7, 1977 from W. F. Gimpel, Jr., Maryland Department of Agriculture.
25. Letter dated August 26, 1977 from F. Winthrop, Jr., Massachusetts Department of Food and Agriculture.
26. Letter dated September 6, 1977. B. G. Blodgett. Massachusetts Division of Fisheries and Wildlife.
27. Minnesota Department of Natural Resources. 1975. "Animals and Plants Which Merit Special Consideration and Management • • • the Uncommon Ones." 32 pp.
28. U.S. Endangered Species Scientific Authority. Transcript of Proceedings. Public Hearing on 1978-1979 Export Findings for Bobcat, Lynx, River Otter and American Ginseng.
29. Pullen, T. M. 1975. Rare and Endangered Plant Species in Mississippi. A Preliminary Unpublished List. 2 pp.
30. Letter dated February 10, 1978 from C. R. Noren, Missouri Department of Conservation.
31. Letter dated May 2, 1978 from J. E. Wylie, Missouri Department of Conservation.
32. Nordstrom, G. R., F. W. Pflieger, K. C. Sadler, and W. H. Lewis. 1977. *Rare and Endangered Species of Missouri.* Missouri Department of Conservation and USDA Soil Conservation Service. 130 pp.
33. Letter dated July 19, 1977 from C. M. Twedt, Nebraska Game and Parks Commission.
34. Letter dated September 30, 1977 from G. E. Crow, University of New Hampshire.
35. Fairbrothers, D. E. and M. Y. Hough. Rare or Endangered Vascular Plants of New Jersey. New Jersey State Museum Science Notes, No. 14. 53 pp.
36. Letter dated October 4, 1977 from H. Jamnback, New York State Science Service.
37. Data received May 30, 1978 by the ESSA from North Carolina.
38. Hardin, J. W. 1977. Vascular Plants. In *Endangered and Threatened Plant and Animals of North Carolina.* J. E. Cooper., S. S. Robinson, and J. B. Funderburg (Editors). North Carolina Museum of Natural History. Raleigh, N.C. 444 pp.
39. Letter dated October 11, 1977 for E. H. McGee, Wilkes County Forester, North Carolina.
40. Correspondence dated September 22, 1977 from B. A. Sanders, USDA Forest Service, NFsNC.
41. Letter dated August 29, 1977 from J. D. Pittillo, Western Carolina University.
42. Letter dated October 29, 1977 from D. M. Dumond, University of North Carolina at Wilmington.
43. Cooperrider, T. S. 1975. Preliminary List of Rare and Endangered Species in Ohio—Dicotyledoneae. Unpublished List. 8 pp.
44. Letter dated August 26, 1977 from R. E. Mosely, J., Ohio Department of Natural Resources.
45. Letter dated July 20, 1977 from D. Anderson, Ohio Natural Heritage Program.
46. Letter dated July 18, 1977 from J. J. Crockett, Oklahoma State University.
47. Rare and Endangered Species of Oklahoma Committee. 1975. "Rare and Endangered Vertebrates and Plants of Oklahoma. USDA Soil Conservation Service. 44 pp.
48. Letter dated August 17, 1977 from M. K. Goddard, Pennsylvania Department of Environmental Resources.
49. Letter dated August 17, 1977 from W. E. Buker, Carnegie Museum.
50. Letter dated August 25, 1977 from J. Adams, Morris Arboretum.
51. Letter dated August 26, 1977 from J. M. Fogg, Arboretum of the Barnes Foundation.
52. Letter dated August 28, 1977 from E. J. Wherry.
53. Letter dated August 29, 1977 from C. L. Bryner Waynesburg College.
54. Letter dated October 26, 1977 from K. A. Friedman, Lehigh Valley Conservancy, Inc.
55. Letters dated August 19, and September 1, 1977 from I. H. Stuckey, University of Rhode Island.
56. Letter dated July 19, 1977 from K. B. Stansell, South Carolina Wildlife and Marine Resources Department.
57. Letter dated September 6, 1977 from S. M. Jones, Clemson University.
58. Letter dated September 14, 1977 from R. C. Clark, Erskine College.
59. Letter dated September 27, 1977 from D. C. Rayner, South Carolina Wildlife and Marine Resources Department.
60. Sharp, A. J. 1974. Rare Plants of Tennessee. The Tennessee Conservationist. 40 (1): 20-21.
61. Collins, J. L., H. R. DeSelm, A. M. Evans, R. Kral, B. E. Wofford. No date. The Rare Vascular Plants of Tennessee. Unpublished manuscript. 26 pp.
62. Letter dated August 23, 1978 from E. T. Browne, Jr., Memphis State University.
63. Letter dated May 9, 1978 from B. R. Allison, Tennessee Department of Conservation.
64. Seymour, F. C. 1969. *The Flora of Vermont.* Fourth Edition. Agriculture Experiment Station Bulletin 660. The University of Vermont. Burlington, Vt. 393 pp.
65. Letter dated September 6, 1977 from E. J. Shiflet, Virginia Secretary of Commerce and Resources.
66. Letter dated September 13, 1977 from D. M. Porter, Virginia Polytechnic Institute and State University.
67. Letter dated October 12, 1977 from W. M. Lofits, Jr., Shenandoah National Park.
68. Letter dated February 21, 1978 from D. E. Carter, West Virginia Department of Natural Resources.
69. Letter dated September 26, 1977 from F. L. Pogge, U.S.D.A. Forest Service.
70. Read, R. H. 1976. Endangered and Threatened Vascular Plants in Wisconsin. Scientific Areas Preservation Council Technical Bulletin 92. Wisconsin Department of Natural Resources. 58 pp.
71. Letter dated August 26, 1977 from P. J. Salamun, University of Wisconsin, Milwaukee.

Remarks. American ginseng is often protected on Federal and State lands. Hypothetically, this protection should provide population reservoirs and serve as a buffer against overexploitation. Unfortunately, it appears that prohibitions against harvest on public lands are not generally observed, probably because of the small amount of resources devoted to enforcement. In fact, in some areas of the country most of the harvest is reported to take place on public lands.

Publication of these proposed findings has been approved unanimously by the members of the Endangered Species Scientific Authority.

Dated: June 30, 1978.

WILLIAM Y. BROWN,
Executive Secretary, Endangered Species Scientific Authority.

[FR Doc. 78-18697 Filed 7-6-78; 8:45 am]

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TABLES: AMERICAN GINSENG

The following tables summarize by State the information concerning American ginseng received by the U.S. Fish and Wildlife Service and the ESSA. Many States have recently initiated programs to better establish the status of this species, to monitor its harvest, and, in some cases, to manage its harvest. Without such programs, it is doubtful that adequate information would be available to support approval of export by the ESSA.

Description of the table categories follows, along with explanations of abbreviations used. More detailed State-by-State summaries of comments are available from the ESSA.

State classification. Most States have trespass statutes pertaining to the protection of private and public plant resources. At minimum, these laws usually require oral permission from private landowners or written permision from State official before the resources may be removed. Although these statutes may be applied to help conserve American ginseng, they were not considered in determining the State classifications. The State classifications are based on State statutes, regulatory authorities, or initiatives specifically concerned with American ginseng.

C=Conserved: A State agency has implemented or has initiated programs to help conserve American ginseng even though the State agency has no express regulatory authority.

R=Regulated: A State agency has regulatory authority to conserve American ginseng.

U=Unregulated: No State agency currently has regulatory authority to conserve American ginseng.

Reported harvest. Few States have even gross estimates of the size of past harvest. The estimate for Virginia is based on voluntary dealer surveys (DS), which may include roots purchased from other dealers as well as those roots purchased from collectors.

State population. A sampling of qualitative opinions concerning American ginseng's abundance and status in the States is provided in the tables. Few of these opinions are supported by data.

As discussed in our August 30, 1977, FEDERAL REGISTER notice (42 FR 43729), qualitative opinions concerning the plant's abundance and status must be viewed critically. Such terms as endangered, rare, and stable are often used imprecisely, without guidelines or criteria. In addition, the plant's status undoubtedly varies with local conditions, further complicating any evaluation of its status and abundance.

In the tables, information concerning American ginseng's status and abundance is followed by a brief explanation of how those determinations were made. In some cases, no grounds for a qualitative opinion were given so no explanation is provided in the "How Determined" column. When available, grounds are stated with the following abbreviations:

B=Biologists' opinions: Either an opinion expressed by a biologist to U.S. Fish and Wildlife Service or the ESSA, or an opinion expressed by one or more biologists which was cited as a basis for a State comment or a State endangered species list.

CC=Collectors' comments: Comments from collectors received by the U.S. Fish and Wildlife Service or the ESSA.

FO=Field observations: Included when field observations were specifically referred to as a basis for the determination.

HR=Herbarium records: Based on information recorded with herbarium specimens.

LS=Literature survey: Based on information in the literature.

SC=Survey of collectors: State survey of American ginseng collectors in the affected State.

SD=Survey of dealers: State survey of American ginseng dealers who purchased roots harvested in the affected State.

Findings and conditions for 1978 season. The ESSA's findings concerning export of roots from the 1978 collecting season are given here. The findings are abbreviated as:

A=Approved: Export is approved for roots legally harvested during the 1978 season. The ESSA considers that harvest in the State will not be detrimental to the survival of the species in that State. Roots must be documented as to State of origin and season of collecting.

Comments. Other information relevant to the finding is given here.

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FOOTNOTES FOR AMERICAN GINSENG TABLE

[NOTE.—A complete reference to footnotes used in these or previous tables may be found in 43 FR 29491, July 7, 1978.]

3. Tucker, G. E., 1974. Threatened Native Plants of Arkansas. In *Arkansas Area Plan.* Arkansas Department of Planning. Little Rock, Ark. pp. 39–65.

4. Barkley, S., January 6, 1978. Public Input Received In Response To Proposed Listing Of American Ginseng (*Panax quinquefolius*) As A Federally-Endangered Or Threatened Species. Unpublished report.

9. McCollum, J. L. (Editor), 1974. "Endangered Species of Georgia." Georgia Department of Natural Resources. Atlanta, Ga. 66 pp.

10. Mohlenbrock, D. H., and J. W. Voigt, 1959. *A Flora of Southern Illinois.* Southern Illinois University Press. Carbondale, Ill. 390 pp.

11. Letter dated September 7, 1978, from J. Schwegman, Illinois Department of Conservation.

12. Memorandum, semi-final list of Endangered and Threatened Plants, dated January 18, 1978, by C. J. Sheviak, Director, Endangered Plants Project, Illinois Natural Land Institute.

13. Correspondence dated December 29, 1976, from R. D. Feldt, Indiana Department of Natural Resources.

14. Letter dated October 4, 1977, from J. D. Cloud, Indiana Department of Natural Resources.

17. Kartesz, J. T., and R. Kartesz, 1977. *The Biota of North America* Part 1: *Vascular Plants.* Volume I: *Rare Plants.* Biota of North America Committee. Pittsburgh, Pa. 361 pp.

27. Minnesota Department of Natural Resources, 1975. "Animals and Plants Which Merit Special Consideration and Management • • • the Uncommon Ones." 32 pp.

36. Letter dated October 4, 1977, from H. Jamnback, New York State Science Service.

48. Letter dated August 17, 1977, from M. K. Goddard, Pennsylvania Department of Environmental Resources.

49. Letter dated August 17, 1977, from W. E. Buker, Carnegie Museum.

50. Letter dated August 25, 1977, from J. Adams, Morris Arboretum.

51. Letter dated August 26, 1977, from J. M. Fogg, Arboretum of the Barnes Foundation.

52. Letter dated August 28, 1977, from E. J. Wherry.

53. Letter dated August 29, 1977, from C. L. Bryne, Waynesburg College.

54. Letter dated October 26, 1977, from K. A. Friedman, Lehigh Valley Conservancy, Inc.

60. Sharp, A. J., 1974. Rare Plants of Tennessee. The Conservationist. 40 (1): 20–21.

61. Collins, J. L., H. R. DeSelm, A. M. Evans, R. Kral, B. E. Wofford. No date. The Rare Vascular Plants of Tennessee. Unpublished manuscript. 26 pp.

62. Letter dated August 23, 1978, from E. T. Browne, Jr., Memphis State University.

63. Letter dated May 9, 1978, from B. R. Allison, Tennessee Department of Conservation.

65. Letter dated September 6, 1977, from E. J. Shiflet, Virginia Secretary of Commerce and Resources.

66. Letter dated September 15, 1977, from D. M. Porter, Virginia Polytechnic Institution and State University.

67. Letter dated October 12, 1977, from W. M. Loftis, Jr., Shenandoah National Park.

70. Read, R. H., 1976. Endangered and Threatened Vascular Plants in Wisconsin. Scientific Areas Preservation Council Technical Bulletin 92. Wisconsin Department of Natural Resources. 58 pp.

71. Letter dated August 26, 1977, from P. J. Salamun, University of Wisconsin, Milwaukee.

THE 1978–79 EXPORT FINDINGS

In light of the substantial information submitted before and during the comment period for our July 7 and August 7, 1978, proposals, the ESSA adopts the following final export findings for the 1978–79 harvest of bobcat, lynx, and river otter, and the 1978 harvest of American ginseng.

The ESSA adopts these findings using the standards for export approval as stated in its proposed rulemaking of July 7, 1978 (43 FR 29469), and as restated in this document.

The ESSA hereby approves export of specimens of these four species from every State for which approval was proposed on July 7, 1978 (43 FR 29469), or August 7, 1978 (43 FR 35013).

The ESSA hereby approves export of specimens of the four species from the States listed in the supplemental tables above, for which export approval was not previously proposed.

Accordingly, Chapter VIII—Endangered Species Scientific Authority is added to Title 50 of the Code of Federal Regulations, consisting at this time of Part 810—Export of Appendix II Species. The regulations for part 810 have not yet been promulgated; however, the following annex is being added to part 810 at this time to read as follows:

THE 1978–79 ANNEX

States for which the ESSA has approved export of bobcat, lynx, or river otter harvested in the 1978–79 season, or American ginseng harvested in 1978.

NOTE.—The Letter "A" indicates export approval. Export of bobcat pelts from New Mexico and Wyoming must be limited to the numbers given in the table. For all other States, the ESSA is unable to find that export will not be detrimental to the survival of these species. For further information see: 43 FR 29469–2949., July 7, 1978), 43 FR 35013–35015 (August 7, 1978), 43 FR 36293 (August 16, 1978), 43 FR [insert number first page this document] (September 1, 1978).

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ENDANGERED SPECIES SCIENTIFIC AUTHORITY

[50 CFR Part 810]

American Ginseng: Export of Appendix II Species; Proposed Export Findings for the 1979 Season

AGENCY: Endangered Species Scientific Authority.

ACTION: Proposed rulemaking.

SUMMARY: The Endangered Species Scientific Authority (ESSA) proposes findings on a State-by-State basis as to whether export of American ginseng roots harvested in 1979 will not be detrimental to the survival of that species. These findings are meant to satisfy ESSA's responsibilities under Article IV, paragraph 2 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, 27 U.S.T. 1087. Federal export permits may be issued only for roots of this species that were harvested in States for which ESSA has found no detriment. The ESSA seeks public comment in order to base such determinations on the best available information.

DATES: Comments are due on or before July 31, 1979.

ADDRESS: Comments should be addressed to the Executive Secretary, Endangered Species Scientific Authority, 18th and C Streets NW., Washington, D.C. 20240. Forthcoming comments and comments already received will be available for public inspection at 1717 H Street NW., Washington, D.C., Room 536, 7:45 a.m. to 5:30 p.m., Mondays through Fridays except federal holidays.

FOR FURTHER INFORMATION CONCERNING BIOLOGICAL FINDINGS CONTACT: Roger E. McManus, Staff Specialist, Endangered Species Scientific Authority, 18th and C Streets NW., Washington, D.C. 20240 (202/653-5948).

FOR INFORMATION CONCERNING FINDINGS BY THE MANAGEMENT AUTHORITY AND STATE CONTROLS CONTACT: Ronald Singer, Staff Biologist, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-2418).

FOR INFORMATION CONCERNING FEDERAL EXPORT PERMITS CONTACT: Bob Batky, Staff Biologist, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-1903).

FOR INFORMATION CONCERNING PROCEDURES FOR EXPORTING SHIPMENTS CONTACT: Thomas McIntyre, Staff Specialist, USDA Animal and Plant Health Inspection Service, Federal Building, Hyattsville, Maryland 20782 (301/436-8297).

SUPPLEMENTARY INFORMATION: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and its implementing regulations, 50 CFR Part 23, control international trade in animal and plant species included in any of three appendices, listed in § 23.23. The CITES appendices are distinct from the list of species issued under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq. American ginseng is included in Appendix II to the CITES. Appendix II includes generally those species not necessarily now threatened with extinction, but which may become so unless trade in them is subject to strict regulation. In addition, Appendix II may include species for which trade needs to be regulated to control effectively trade in species included because of biological jeopardy. The CITES requires Parties to control trade in Appendix II specimens through export permits. National management authorities are to administer permit and enforcement activities and national scientific authorities are to ensure that permitted trade will not be detrimental to the species concerned.

The Endangered Species Scientific Authority (ESSA) serves as the U.S. Scientific Authority; the Secretary of the Interior through the Director of the U.S. Fish and Wildlife Service serves as the U.S. Management Authority (MA) for the CITES. Before the MA can issue permits for foreign export of Appendix II species, such as American ginseng, taken from the wild, the MA must be satisfied that specimens were not obtained in violation of State or federal law and in addition the ESSA must advise the MA that the export will not be detrimental to the survival of the species (CITES, Article IV, paragraph 2). Although this proposal refers to ESSA "approval" of export, the term indicates that the ESSA has no objection to issuance of export permits by the MA and in no way suggests limitation of the authority of the MA to withhold permits on other grounds. Note also that CITES certificates are required for export of cultivated American ginseng, but that no CITES documentation is required for harvest, transport, or sale of wild or cultivated ginseng within the United States. However, harvest of wild American ginseng from public lands usually requires written permission from the administrating agency, and harvest, transport, and commerce in this species are subject to control in some States.

Since 1977, the ESSA has made export findings for American ginseng on a state-by-state basis. We propose to continue this approach for the 1979 harvest.

The ESSA published an advance notice of proposed rulemaking in the April 30, 1979 Federal Register (44 FR 25383). The notice, in part, states generally what types of information the ESSA will need to make findings in favor of export of legally obtained specimens of American ginseng harvested in 1979.

Environmental Assessment

The environmental consequences of extreme alternative standards for findings by the ESSA were discussed for American ginseng in proposed findings for the 1978 harvest season (43 FR 29409). That environmental analysis concluded that neither extreme finding (no export versus export without restriction by the ESSA) would be a major Federal action significantly affecting the quality of the human environment. That analysis applies equally well to these proposed standards and findings and will not be repeated.

Proposed Standards

The ESSA proposes to follow the guidelines for findings on detriment published in the April 10, 1978 Federal Register (43 FR 15097). These guidelines are intentionally general. A combination of biological information and management initiatives can potentially satisfy the ESSA that export will not be detrimental to a species' survival, and the ESSA does not want to constrain unnecessarily state agencies in the manner by which they may endeavor to conserve this species and help to fulfill U.S. obligations under the CITES.

The ESSA proposes to approve export of wild American ginseng from those states that have implemented substantial programs to conserve the species, whose populations can support the harvest. Acceptable conservation programs generally must include some form of research and regulation designed to monitor the status of the state's wild populations, to provide annual harvest estimates, and to control exploitation. The ESSA recognizes the recency of wild plant management in many states, and the frequent lack of management authority in state agencies. Consequently, we propose to approve export from certain states whose management agencies lack authority to limit exploitation provided those states

have substantial plans for 1979 under existing authority, and provided available information indicates that populations of the state can support the harvest. Several state agencies are seeking additional authority from their legislatures. The ESSA wishes to be supportive of new state programs; however, our proposals to approve export for roots harvested in 1979 should not be construed as a precedent for approval in the future.

A number of state agencies did not supply the ESSA with information concerning the past season or their management programs for 1979 in time for this proposal. We have not proposed to approve export in these instances. However, many of these state agencies have indicated that additional information will be forthcoming, and our final determinations in August will reflect this information and any other comment on our proposal.

Tables: American Ginseng

The following tables summarize by state the information concerning American ginseng received by the ESSA. Only those states where the plant has been known to occur are listed. Many states have recently initiated programs to clarify the status of this species, to monitor its harvest, and to control its exploitation. Without such State programs it is doubtful that adequate information would be available to support approval of export by the ESSA.

Descriptions of the table categories follow, along with explanations of abreviations used. More detailed state-by-state summaries of comments are available from the ESSA.

State Classification

Most states have trespass statutes addressing the protection of private and public plant resources. At minimum these laws usually require oral permission from the land owner or administrator before the resources may be removed. Although these statutes may help conserve American ginseng, they were not considered in determining the state classifications. The state classifications are based on state statutes, regulatory authorities, or initiatives specifically concerned with American ginseng.

C=Conservation program: A state agency has implemented or has initiated a program to help conserve American ginseng even though the State agency has no express regulatory authority.

M=Management program: A state agency has regulatory authority to limit exploitation of American ginseng and has initiated a program to help conserve the species.

N=No conservation program: No state agency has been charged with the conservation of this species or has regulatory authority to limit exploitation.

Reported Harvest

All of the states approved for export in 1978 indicated that they would develop harvest estimates. Usually these estimates are based on voluntary or mandatory dealer reporting (VDR, MDR), or voluntary or mandatory collector reporting (VCR, MCR). In some cases these estimates are based on state export permits or certificates (SED). The reliability of such estimates of the harvest differs because of a variety of factors, including the methods used by the states in collecting the data.

Reported Export

ESSA's findings in favor of export of the 1978 harvest were made on the condition that the "Roots must be documented as to state of origin and season of collecting." The MA is responsible for ensuring compliance with any conditions on ESSA findings of no detriment. In addition, the CITES requires that "a Management Authority of the State of export is satisfied that the specimen(s) (were) not obtained in contravention of the laws of that State for the protection of fauna and flora" (Article IV, paragraph 2(b)). Export statistics compiled by the MA with respect to these responsibilities are based on documents submitted to USDA port officials by exporters prior to export. Export statistics included in the tables are based on exports recorded by the MA between September 1, 1978 and April 15, 1979. The reliability of these statistics is primarily determined by the degree of accurate reporting by collectors and dealers, the degree of compliance by exporters, the efficiency of reporting by USDA, and the methods and procedures used by the MA in ensuring compliance with trade controls.

As data and other relevant information become available, the ESSA will develop analyses on the reliability of harvest and export data, the relationship between harvest and export, and the effectiveness of trade controls. These analyses first will be conducted for harvest and export data for 1977 and 1978. Results of these analyses will be made available to the public, and will be considered in future findings by the ESSA.

State Population

A sampling of opinions concerning American ginseng's abundance and status in the states is provided in the tables. Few of these opinions are supported by data.

As discussed in our August 30, 1977 Federal Register notice (42 FR 43729), qualitative opinions concerning the plant's abundance and status must be viewed critically. Such terms as "endangered", "rare", and "stable" are often used imprecisely, without guidelines or criteria. In addition, the plant's status undoubtedly varies with local conditions, further complicating evaluation of its status and abundance.

In the tables, information concerning American ginseng's status and abundance is followed by brief explanations as to how those determinations were made. In some cases, no grounds for a qualitative opinion were given so no explanation is provided in the "How Determined" column. When available, grounds are stated with the following abbreviations:

B=Biologists' opinions: Either an opinion expressed by a biologist to U.S. Fish and Wildlife Service or to the ESSA, or an opinion expressed by one or more biologists which was cited as a basis for a state comment or a state endangered species list.

CC=Collectors comments: Comments from collectors received by the U.S. Fish and Wildlife Service or the ESSA.

FO=Field observations: Included when field observations were specifically referred to as a basis for the determination.

HR=Herbarium records: Based on information recorded with herbarium specimens.

LS=Literature survey: Based on information in the literature.

SC=Survey of collectors: State survey of individuals who collect American ginseng in the State.

SD=Survey of dealers: State survey of dealers who purchase roots harvested in the state.

Findings and Conditions for 1979 Season.

The ESSA's proposed findings and conditions concerning export of roots from the 1979 collecting season are given here. These proposed findings and conditions are subject to change as further information is received, and final findings and conditions will be published about August 10. The ESSA may publish revised, proposed findings on or about July 10 based on information not considered in this proposed

rulemaking. The proposed findings and conditions are abbreviated as:

A = Approved: Export is approved for roots legally obtained during the 1979 season. The ESSA considers that harvest in the state will not be detrimental to the survival of the species in that state.

Roots must be documented as to state of origin and season of collecting. Methods and procedures to be followed by the MA to ensure compliance with this condition must be provided to the ESSA on a state-by-state basis prior to the forthcoming rulemaking addressing this species.

NEA = No export approved: Available information does not support an ESSA finding in favor of export of the 1979 harvest. Several states not approved anticipate providing additional information which may support approval of export.

Comments

Other information relevant to the findings is given here.

1. Thomas, J. L. 1976. Plants In Endangered and Threatened Plants and Animals of Alabama. University of Alabama. University, Ala. 93 pp.
2. Letter dated October 18, 1977 from Governor George C. Wallace.
3. Tucker, G. E. 1974. Threatened Native Plants of Arkansas. In Arkansas Natural Area Plan. Arkansas Department of Planning. Little Rock, Ark. p. 39–65.
4. Barkley, S. January 6, 1978. Public Input Received in Response to Proposed Listing of American Ginseng (*Panax quinquefolius*) As A Federally-Endangered Or Threatened Species. Unpublished report. Arkansas Game and Fish Commission. 6 pp.
5. Dowhan, J. J. Status Report: Ginseng. Unpublished report. 4 pp.
6. Dowhan, J. J. and R. J. Craig, 1976. Rare and Endangered Species of Connecticut and Their Habitats. Department of Environmental Protection. Report of Investigations, No. 6. The Natural Resources Center. State Geological and Natural History Survey of Connecticut. Hartford, Conn. 137 pp.
7. Oral statement by Dr. C. W. Dunham, University of Delaware.
8. Letter dated March 9, 1979 from H. L. Alexander, Jr., Delaware Department of Natural Resources and Environmental Control.
9. McCollum, J. L. (Editor). 1974. Endangered Species of Georgia. Georgia Department of Natural Resources. Atlanta, Ga. 66 pp.
10. Mohlenbrock, D. H. and J. W. Voigt. 1959. A Flora of Southern Illinois. Southern Illinois University Press, Carbondale, Ill. 390 pp.
11. Letter dated September 7, 1978 from J. Schwegman, Illinois Department of Conservation.
12. Memorandum, Semi-final list of Endangered and Threatened Plants, dated January 18, 1978 from C. J. Sheviak, Director, Endangered Plants Project, Illinois Natural Land Institute.
13. Correspondence dated December 29, 1976 from R. D. Feicht, Indiana Department of Natural Resources.
14. Letter dated October 4, 1977 from J. D. Cloud, Indiana Department of Natural Resources.
15. Letter dated March 27, 1979 from Anthony S. Earl, Wisconsin Department of Natural Resources.
16. Letter dated May 26, 1977 from A. Krochmal, USDA Forest Service.
17. Kartesz, J. T. and R. Kartesz. 1977. The Biota of North America part 1: Vascular Plants. Volume I: Rare Plants. Biota of North America Committee. Pittsburgh, Pa. 361 pp.
18. Letter dated September 7, 1977 from R. Cranfill, University of Kentucky.
19. Letter dated September 29, 1977 from W. H. Martin, Eastern Kentucky University.
20. Letter dated July 14, 1977 from Mary Curry, VTN Louisiana Inc.
21. Eastman, L. M. 1976. Ginseng, *Panax quinquefolius* L., in Maine and its relevance to the Critical Areas Program. Maine State Planning Office, Planning Report No. 16, Augusta, Maine. Unpublished Report.
22. Letter dated October 7, 1977 from W. Jabine III, Maryland Department of Natural Resources.
23. Letter dated November 7, 1977 from W. F. Gimpel, Jr., Maryland Department of Agriculture.
24. Letter dated August 26, 1977 from F. Winthrop, Jr., Massachusetts Department of Food and Agriculture.
25. Letter dated September 6, 1977 from B. G. Blodgett, Massachusetts Division of Fisheries and Wildlife.
26. Letter dated March 29, 1979, from S. M. Taylor, Michigan Department of Natural Resources.
27. Minnesota Department of Natural Resources. 1975. "Animals and Plants Which Merit Special Consideration and Management * * * the Uncommon Ones." 32 pp.
28. Pullen, T. M. 1975. Rare and Endangered Plant Species in Mississippi. A Preliminary Unpublished List. 2 pp.
29. Nordstrom, G. R., F. W. Pfrieger, K. C. Sadler, and W. H. Lewis. 1977. Rare and Endangered Species of Missouri. Missouri Department of Conservation and USDA Soil Conservation Service. 130 pp.
30. Letter dated July 19, 1977 from C. M. Twedt, Nebraska Game and Parks Commission.
31. Letter dated September 30, 1977 from G. E. Crow, University of New Hampshire.
32. Fairbrothers, D. E. and M. Y. Hough. Rare or Endangered Vascular Plants of New Jersey. New Jersey State Museum Science Notes, No. 14. [illegible] p.
33. Letter dated October 4, 1977 from H. Jamnback, New York State Science Service.
34. Hardin, J. W. 1977. Vascular Plants. In Endangered and Threatened Plants and Animals of North Carolina. J. E. Cooper, S. S. Robinson, and J. B. Funderburg (Editors). North Carolina Museum of Natural History, Raleigh, N.C. 444 pp.
35. Letter dated October 11, 1977 from E. H. McGee, Wilkes County Forestor, North Carolina.
36. Correspondence dated September 22, 1977 from B. A. Sanders, USDA Forest Services, NFsNC.
37. Letter dated August 29, 1977 from J. D. Phillo, Western Carolina University.
38. Letter dated October 29, 1977 from D. M. Dumond, University of North Carolina at Wilmington.
39. Cooperrider, T. S. 1975. Preliminary List of Rare and Endangered Species in Ohio—Dicotyledoneae. Unpublished List. 8 pp.
40. Letter dated August 26, 1977 from R. E. Mosely, Jr., Ohio Department of Natural Resources.
41. Letter dated July 20, 1977 from D. Anderson, Ohio Natural Heritage Program.
42. Letter dated July 18, 1977 from J. J. Crockett, Oklahoma State University.
43. Rare and Endangered Species of Oklahoma Committee.1975. Rare and Endangered Vertebrates and Plants of Oklahoma. USDA Soil Conservation Service. 44 pp.
44. Letter dated August 17, 1977 from M. K. Goddard, Pennsylvania Department of Environmental Resources.
45. Letter dated August 17, 1977 from W. E. Buker, Carnegie Museum.
46. Letter dated August 25, 1977 from J. Adams, Morris Arboretum.
47. Letter dated August 26, 1977 from J. M. Frogg, Arboretum of the Barnes Foundation.
48. Letter dated August 29, 1977 from E. J. Wherry.
49. Letter dated August 29, 1977 from C. L. Bryner, Waynesburg College.
50. Letter dated October 25, 1977 from K. A. Friedman, Lehigh Valley Conservancy, Inc.
51. Letters dated August 19, and September 1, 1977 from I. H. Stuckey, University of Rhode Island.
52. Letter dated July 19, 1977 from K. B. Stansell, South Carolina Wildlife and Marine Resources Department.
53. Letter dated September 6, 1977 from S. M. Jones, Clemson University.
54. Letter dated September 14, 1977 from R. C. Clark, Erskine College.
55. Letter dated September 27, 1977 from D. C. Rayner, South Carolina Wildlife and Marine Resources Department.
56. Sharp, A. J. 1974. Rare Plants of Tennessee. The Tennessee Conservationist. 40(1):20–21.
57. Collins, J. L., H. R. DeSelm, A. M. Evans, R. Kral, B. E. Wofford. No date. The Rare Vascular Plants of Tennessee. Unpublished manuscript. 26 pp.
58. Letter dated August 23, 1978 from E. T. Browne, Jr., Memphis State University.
59. Letter dated May 9, 1978 from B. R. Allison, Tennessee Department of Conservation.
60. Seymour, F. C. 1969. The Flora of Vermont. Fourth Edition. Agriculture Experiment Station Bulletin 660. The University of Vermont. Burlington, Vt. 393 pp.
61. Letter dated September 6, 1977 from E. J. Shiflet, Virginia Secretary of Commerce and Resources.
62. Letter dated September 15, 1977 from D. M. Porter, Virginia Polytechnic Institute and State University.
63. Letter dated October 12, 1977 from W. M. Lotts, Jr., Shenandoah National Park.
64. Letter dated February 21, 1978 from D. E. Carter, West Virginia Department of Natural Resources.
65. Letter dated September 26, 1977 from F. L. Pogue, USDA Forest Service.
66. Read, R. H. 1976. Endangered and Threatened Vascular Plants in Wisconsin. Scientific Areas Preservation Council Technical Bulletin 92. Wisconsin Department of Natural Resources. 58 pp.
67. Letter dated August 26, 1977 from P. J. Salamun, University of Wisconsin, Milwaukee.
68. Mothe, S. 1978. Population Dynamics, Life History, and Management Recommendations for Wild American Ginseng. Interim, unpublished report. 21 pp.

Remarks. American ginseng is often protected on federal and state lands. Hypothetically, this protection should provide population reservoirs and serve as a buffer against overexploitation. Unfortunately, it appears that prohibitions against harvest on public lands are not generally observed, probably because of the small amounts of resources devoted to enforcement. In fact, in some areas of the country most of the harvest is reported to take place on public lands.

Proposed Regulations Promulgation

Accordingly, it is proposed to add a new Annex A to 50 CFR Part 810 to read as follows (1978 findings are taken from the present Annex to Part 810):

Annex A—American ginseng

State populations for which the ESSA has found that export of the indicated season's harvest will not be detrimental to the survival of the species.

1978 Harvest: Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New York, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. *Conditions on findings:* Roots must be documented as to state of origin and season of collecting.

For further information: see 43 FR 29469, July 7, 1978; 43 FR 35013, August 7, 1978; 43 FR 36293, August 16, 1978; and 43 FR 39305, September 1, 1978.

1979 Harvest: Wisconsin and Kentucky. *Conditions on findings: Roots must be documented as to state of origin and season of collecting. Methods and procedures to be followed by the MA to ensure compliance with this condition must be provided to the ESSA on a state-by-state basis prior to the final rulemaking addressing this species. For further information:* see 44 FR 3107, June 1, 1979

Publication of these proposed findings has been approved unanimously by the members of the Endangered Species Scientific Authority.

Dated: May 25, 1979.

William Y. Brown,

Executive Secretary.

[FR Doc. 79-16960 Filed 5-31-79; 8:45 am]

BILLING CODE 4310-55-M

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ENDANGERED SPECIES SCIENTIFIC AUTHORITY

50 CFR Part 810

Export of Appendix II Species American Ginseng; Export Findings for the 1979 Harvest Season

AGENCY: Endangered Species Scientific Authority.

ACTION: Final rulemaking.

SUMMARY: On June 1, 1979 the Endangered Species Scientific Authority (ESSA) proposed findings on a state-by-state basis as to whether export of American ginseng roots harvested in 1979 will not be detrimental to the survival of the species (44 FR 31583 et seq.). This proposal was preceded by an advance notice of proposed rulemaking published in the April 30, 1979 Federal Register (44 FR 25383). The ESSA has received substantial comment on the proposal, primarily in the form of state reports in support of no detriment findings. The ESSA hereby establishes final export findings for this season. Federal export permits may be issued only for ginseng roots that were harvested in states for which the Management Authority (U.S. Fish and Wildlife Service) is satisfied the state ginseng management and control programs assure that the roots to be harvested will be legally obtained and certified, and for which the ESSA has found that such export will not be detrimental to the survival of the species.

EFFECTIVE DATE: August 15, 1979.

ADDRESS: Comments should be addressed to the Executive Secretary, Endangered Species Scientific Authority, 18th and C Streets, NW., Washington, DC 20240. Forthcoming comments and comments already received will be available for public inspection at 1717 H Street NW., Washington, DC, Room 536, 7:45 a.m. to 5:30 p.m., Mondays through Fridays except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Information concerning findings by the ESSA contact: Roger E. McManus, Staff Specialist, Endangered Species Scientific Authority, 18th and C Streets, NW., Washington, DC 20240 (202/653–5948).

For information concerning findings by the Management Authority and State Controls contact: Ronald Singer, Staff Biologist, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235–2418).

For information concerning Federal Export Permits contact: Bob Batky, Staff Biologist, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235–1903).

For information concerning procedures for exporting shipments contact: Thomas McIntyre, Staff Specialist, USDA Animal and Plant Health Inspection Service, Federal Building, Hyattsville, Maryland 20782 (301/436–8297).

SUPPLEMENTARY INFORMATION: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and its implementing regulations, 50 CFR Part 23, control international trade in animal and plant species included in any of three appendices, listed in § 23.23. The CITES appendices are distinct from the list of species issued under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq. American ginseng is included in Appendix II to the CITES. Appendix II includes generally those species not necessarily now threatened with extinction, but which may become so unless trade in them is subject to strict regulation. In addition, Appendix II may include species for which trade needs to be regulated to control effectively trade in species included because of biological jeopardy. The CITES requires Parties to control trade in Appendix II specimens through export permits. National management authorities are to administer permit and enforcement activities and national scientific authorities are to ensure that permitted trade will not be detrimental to the species concerned.

The Endangered Species Scientific Authority (ESSA) serves as the U.S. Scientific Authority; the Secretary of the Interior, through the Director of the U.S. Fish and Wildlife Service, serves as the U.S. Management Authority (MA) for the CITES. Before the MA may issue permits for foreign export of Appendix II species (such as American ginseng) taken from the wild, the MA must be satisfied that specimens were not obtained in violation of State or federal law, and the ESSA must advise the MA that the export will not be detrimental to the survival of the species (CITES, Article IV, paragraph 2). Although this notice refers to ESSA "approval" of export, the term indicates that the ESSA has no objection to issuance of export permits by the MA and in no way suggests limitation of the authority of the MA to withhold permits on other grounds. Note also that CITES certificates of artificial propagation are required for export of cultivated American ginseng, but that no CITES documentation is required for harvest, transport, or sale of wild or cultivated ginseng within the United States. However, harvest of wild American ginseng from public lands usually requires written permission from the administrating agency, and harvest, transport, and commerce in this species are subject to certain controls in many States.

The ESSA published an advance notice of proposed rulemaking in the April 30, 1979 Federal Register (44 FR 25383). This notice, in part, states generally what types of information the ESSA will need to make findings in favor of export of legally obtained specimens of American ginseng harvested in 1979.

The ESSA published a notice of proposed rulemaking in the June 1, 1979 Federal Register (44 FR 31857). In that notice the ESSA proposed to make export findings on a state-by-state basis, as we have done since 1977, and proposed standards for making export findings:

> The ESSA proposes to approve export of wild American ginseng from those states that have implemented substantial programs to conserve the species, whose populations can support the harvest. Acceptable conservation programs generally must include some form of research and regulation designed to monitor the status of the state's wild populations, to provide annual harvest estimates, and to control exploitation. The ESSA recognizes the recency of wild plant management in many states, and the frequent lack of management authority in state agencies. Consequently, we propose to approve export from certain states whose management agencies lack authority to limit exploitation provided those states have substantial plans for 1979 under existing authority, and provided available information indicates that populations of the state can support the harvest. Several state agencies are seeking additional authority from their legislatures. The ESSA wishes to be supportive of new state programs; however, our proposal to approve export for roots harvested in 1979 should not be construed as a precedent for approval in the future.

In a letter dated July 27, 1979, William C. Babham, Director, Iowa State Conservation Commission, supported the proposed standards.

Also in that notice the ESSA proposed to find in favor of export of roots harvested in 1979 in Wisconsin and Kentucky, and proposed as conditions that:

> Roots must be documented as to state of origin and season of collecting. Methods and procedures to be followed by the MA to ensure compliance with this condition must be provided to the ESSA on a state-by-state

basis prior to the final rulemaking addressing this species.

In a memorandum dated July 24, 1979, Richard M. Parsons, Chief, Federal Wildlife Permit Office, provided William Y. Brown, Executive Secretary, ESSA, with information concerning the current status of the State ginseng programs, a letter to ginseng exporters discussing certification of artificially cultivated ginseng, and a fact sheet and other materials provided ginseng exporters. The Management Authority is requiring the States to certify that roots to be exported from the States are legally obtained, and documented as to state of origin and season of collecting.

The rest of the comments received concern the status of American ginseng in the states the ESSA did not propose to find in favor of exports. Most of these comments were from state management agencies responsible for the conservation of this species. These comments are summarized in the following tables.

Tables: American Ginseng—The following tables summarize by state the information concerning American ginseng received by the ESSA. Only those states where the plant has been known to occur are listed. Many states have recently initiated programs to clarify the status of this species, to monitor its harvest, and to control its exploitation. Without such state programs it is doubtful that adequate information would be available to support approval of export by the ESSA.

This is particularly the case considering available information which suggests that harvest may be adversely impacting wild populations. The ESSA has received reports that there has been a large spring and summer harvest in some parts of the country. This practice results in the harvest of individual plants before they have an opportunity to reproduce. Generally, American ginseng does not fruit until mid-August or early September. Moreover, the ESSA has received information that recent harvests consist of roots that are smaller on the average than those harvested in the past, suggesting collectors are harvesting younger plants than they have harvested in the past. Such reports are accompanied by reports of record prices for wild root (e.g., "New York-Northern Pennsylvania last seasons collection usual average size 175.00 per lb.", United Fur Brokers *Market Bulletin*, July 25, 1979).

Descriptions of the table categories follow, along with explanations of abbreviations used. More detailed state-by-state summaries of comments are available from the ESSA.

State Classification

Most states have trespass statutes addressing the protection of private and public plant resources. At minimum these laws usually require oral permission from the land owner or administrator before the resources may be removed. Although these statutes may help conserve American ginseng, they were not considered in determining the state classifications. The state classifications are based on state statutes, regulatory authorities, or initiatives specifically concerned with American ginseng. State classifications are abbreviated as:

C = Conservation program: A state agency has implemented or has initiated a program to help conserve American ginseng even though the state agency has no express regulatory authority.

M = Management program: A state agency has regulatory authority to limit exploitation of American ginseng and has initiated a program to help conserve the species.

N = No conservation program: No state agency has been charged with the conservation of this species or has regulatory authority to limit exploitation.

Reported Harvest

All of the states approved for export in 1978 indicated that they would develop harvest estimates. Usually these estimates are based on voluntary or mandatory dealer reporting (VDR, MDR), or voluntary or mandatory collector reporting (VCR, MCR). In some cases these estimates are based on state export permits or certificates (SED). The reliability of such estimates of the harvest differs because of a variety of factors, including the methods used by the states in collecting the data.

Reported Export

ESSA's findings in favor of export of the 1978 harvest were made on the condition that the "Roots must be documented as to state of origin and season of collecting." The MA is responsible for ensuring compliance with any conditions on ESSA findings of no detriment. In addition, the CITES requires that "a Management Authority of the State of export is satisfied that the specimen(s) (were) not obtained in contravention of the laws of that State for the protection of fauna and flora" (Article IV, paragraph 2(b)). Export statistics compiled by the MA with respect to these responsibilities are based on documents submitted to USDA port officials by exporters prior to export. Before export permits are valid they must be stamped, signed and dated by a USDA agent. Export statistics included in the tables are based on exports recorded by the MA between September 1, 1978 and August 2, 1979. The reliability of these statistics is primarily determined by the degree of accurate reporting by collectors and dealers, the degree of compliance by exporters, the efficiency of reporting by USDA, and the methods and procedures used by the MA in ensuring compliance with trade controls.

As data and other relevant information become available, the ESSA will develop analyses on the reliability of harvest and export data, the relationship between harvest and export, and the effectiveness of trade controls. These analyses first will be conducted for harvest and export data for 1977 and 1978. Results of these analyses will be made available to the public, and will be considered in future findings by the ESSA.

State Population

A sampling of opinions concerning American ginseng's abundance and status in the states is provided in the tables. Few of these opinions are supported by data.

As discussed in our August 30, 1977 **Federal Register** notice (42 FR 43729), qualitative opinions concerning the plant's abundance and status must be viewed critically. Such terms as "endangered", "rare", and "stable" are often used imprecisely, without guidelines or criteria. In addition, the plant's status undoubtedly varies with local conditions, further complicating evaluation of its status and abundance.

In the tables, information concerning American ginseng's status and abundance is followed by brief explanations as to how those determinations were made. In some cases, no grounds for a qualitative opinion were given so no explanation is provided in the "How Determined" column. When available, grounds are stated with the following abbreviations.

B = Biologists' opinions: Either an opinion expressed by a biologist to the U.S. Fish and Wildlife Service or to the ESSA, or an opinion expressed by one or more biologists which was cited as basis for a state comment or a state endangered species list.

CC = Collectors comments: Comments from collectors received by the U.S. Fish and Wildlife Service or the ESSA.

FO = Field observations: Included when field observations were

found that export of the indicated season's harvest will not be detrimental to the survival of the species.

1978 Harvest: Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New York, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin.

Conditions on findings: Roots must be documented as to state of origin and season of collecting.

For further information see: 43 FR 29469, July 7, 1978; 43 FR 35013, August 7, 1978; 43 FR 36293, August 16, 1978; and 43 FR 39305, September 1, 1978.

1979 Harvest: Arkansas, Georgia, Illinois, Iowa, Kentucky, Maryland, Minnesota, Missouri, North Carolina, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin.

Conditions on findings: Roots must be documented as to state of origin and season of collecting. For further information see: 44 FR 25384, April 30, 1979; 44 FR 3107, June 1, 1979; and 44 FR 47902, August 15, 1979.

Dated: August 10, 1979.

William Y. Brown,

Executive Secretary.

[FR Doc. 79-25101 Filed 8-14-79; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Parts 23 and 810

Proposed Findings for Export of Bobcat, Lynx, River Otter, Alaskan Brown Bear, Alaskan Gray Wolf, American Alligator, and American Ginseng Taken in 1980–81 Season

AGENCY: U.S. Fish and Wildlife Service.

ACTION: Proposed rule and findings.

SUMMARY: The Convention on International Trade in Endangered Species of Wild Fauna and Flora is a 59-nation treaty regulating the international shipment of certain wildlife and plant species. Under the Convention, exports of wildlife or plants listed in Appendix I or II may occur only if a Scientific Authority has advised a permit-issuing Management Authority that such exports will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the wildlife or plants were not obtained in violation of laws for their protection.

The Service finds it most effective to develop such Scientific Authority and Management Authority decisions for the export of certain heavily traded species on an annual basis, applicable to all exports of specimens taken in a particular season. In this notice, the Service summarizes information on the status of bobcat, lynx, river otter, Alaskan brown bear, Alaskan gray wolf, American alligator, and American ginseng, and proposes decisions on whether export permits should be issued for specimens of these animals or this plant taken in the 1980–81 season.

The Service seeks public comment in order to base its final decisions on the best available information.

DATES: All information and comments received by October 14, 1980 for American ginseng and American alligator, and by October 24, 1980 for other species will be considered.

ADDRESS: Please send correspondence concerning this notice to the Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, DC 20240. Materials received will be available for public inspection from 7:45 a.m. to 4:15 p.m., Monday through Friday, in room 536, 1717 H Street, NW, Washington, DC.

FOR FURTHER INFORMATION CONTACT:

Biological findings—Dr. Richard L. Jachowski, Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, DC 20240, telephone (202) 653–5948.

Export permits—Mr. S. Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240, telephone (703) 235–2418.

SUPPLEMENTARY INFORMATION:

Background

The Service summarized its responsibilities in carrying out Scientific Authority functions for the United States in the July 10, 1980, Federal Register (45 FR 46464). That publication described policies of the former Endangered Species Scientific Authority (ESSA) in developing advice on the import and export of listed species. It also summarized basic elements of Scientific Authority advice on the export of the following Appendix II species taken in the 1980–81 season: bobcat, lynx, river otter, Alaskan brown bear, Alaskan gray wolf, American alligator, and American ginseng.

The Service is developing Scientific Authority advice on the export of these seven species by treating them as included under Article II.2(a) or Article II.2(b) of the Convention, or both. According to Article II.2, Appendix II is to include:

(a) All species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival; and

(b) Other species which must be subject to regulation in order that trade in specimens of certain species referred to in sub-paragraph (a) of this paragraph may be brought under effective control.

For reasons given in the Federal Register on July 12, 1979 (44 FR 40842) and on July 10, 1980 (45 FR 46464), the Service is developing advice on non-detriment with respect to both Article II.2(a) and Article II.2(b) for the American alligator, bobcat, lynx, and river otter. The Service is developing such advice with respect only to Article II.2(a) for American ginseng and with respect only to Article II.2(b) for the Alaskan brown bear and Alaskan gray wolf. The significance of this treatment is that for species included under Article II.2(a), the Service is giving advice on non-detriment with respect to the effects of trade on the species in question, whereas for species included under Article II.2(b), it is giving such advice with respect to the effects of trade in that species on other species, subspecies or geographically separate populations that the species in question was listed to protect.

Criteria

Criteria used by the ESSA in previous years for determining whether exports will not be detrimental to the survival of a species were described in the Federal Register notices cited above. As stated in the July 10, 1980, Federal Register (45 FR 46464), the Service is applying the same criteria and is seeking essentially the same types of information as requested by the ESSA in developing advice for the 1980–81 season on whether export will not be detrimental to the survival of the species.

The ESSA published guidelines for export of bobcat, lynx, and river otter, that depend on analysis of both biological and management programs adopted by States. A working group on these species recommended the following minimum requirements to assure that export will not be detrimental (see 43 FR 15098; April 10, 1978):

A. Minimum Requirements for Biological Information

1. Population trend information * * * the method of determination to be a matter of State choice.
2. Information on total harvest of the species.
3. Information on distribution of harvest.
4. Habitat evaluation.

B. Minimum Requirements for a Management Program

1. There should be a controlled harvest * * * methods and seasons to be a matter of State choice.
2. All pelts should be registered and marked.
3. Harvest level objective should be determined annually.

With respect to the working group recommendations, the ESSA noted in the September 26, 1979, Federal Register (44 FR 55540) that not all States met every one of the minimum requirements. The ESSA approved export from some States when it considered that other information would provide a reasonable basis for a finding of no detriment. It stated that this was done with the understanding that early stages of research and progress toward improved management might be inhibited or made more difficult if no export were allowed at all. In the ESSA's view, intensive efforts being made to improve the States' information both on populations and harvests, and other information may provide reasonable assurances that export will not be detrimental. It noted that such assurances are further strengthened by States' actions in providing new controls on harvest and

sale where these have been less rigorous in the past and where current conditions call for such changes. The Service concurs with this view, recognizing that the effectiveness of the Convention in preventing over-utilization of native wildlife and plants through international trade depends largely on State efforts.

In addition to advice from the Scientific Authority, export on Appendix II species requires that the Management Authority is satisfied that specimens were not obtained in violation of State or Federal law. The Service's Federal Wildlife Permit Office, in meeting this responsibility, directly contacted responsible State agencies by letter, outlining specific requirements to satisfy the Federal program necessary to comply with export requirements of the Convention. That office returned to each State a written evaluation of its program for the 1980–81 season. States were asked to improve those aspects of their programs that were found to be deficient. The Wildlife Permit Office considers the following ongoing program to be necessary to qualify a State's wildlife for export:

A tagging system must exist as proof of legal taking. Tags must:

1. Be made of metal or some other permanent material;
2. Be permanently attached to each skin, preferably by State personnel;
3. Accompany finished products to the port where the State tags will be collected by U.S. Fish and Wildlife Service Officers. (The tags are necessary to show source and tag numbers of pelts used in the manufacture of the product.)
4. Be applied within a specified time of taking that is set by the State;
5. Show State of origin;
6. Show year of taking;
7. Show species; and
8. Be serially unique.

The Federal Wildlife Permit Office also considers the following ongoing program (operating on either a mandatory or voluntary basis) to be necessary to qualify a State's ginseng for export. A mandatory program administered by the State is preferable to a voluntary one, but a functional voluntary one may be acceptable if the State is working toward regulatory control.

1. An ongoing, State sponsored, American ginseng research program;
2. State certification or registration of dealers and exporters;
3. A requirement that dealers and exporters maintain a record of their commerce in ginseng;
4. A limited taking season to be established by the State to foster survival of the species; and
5. A certificate of legal taking identifying dealer, origin, year of taking, whether wild or cultivated, and weight of the shipment, attached to each export from the State. (This is required only for each export, not for each transaction within the State. This certificate must be presented to Federal officials at the point of export from the United States.)

Court Decision

As the result of a civil action brought against the ESSA and the Department of Interior by Defenders of Wildlife, Inc., the U.S. District Court for the District of Columbia issued an Order on December 12, 1979, enjoining the export of bobcat pelts taken in the 1979–80 season from Florida, Massachusetts, New Mexico, North Dakota, Wisconsin, eastern Oregon, and the high plains area of Texas.

That Order still stands, although it has been appealed to the United States Court of Appeals for the District of Columbia Circuit. The Order does not enjoin export of bobcat pelts taken in the 1980–81 season. Steps to correct conditions that the District Court considered to be deficiencies are included in information provided by certain of the affected States. In addition, the States of Florida, Massachusetts, and New Mexico supplied additional biological information and, in the case of New Mexico, instituted a management program, that they believe should qualify the 1979–80 harvest of bobcats for export. The Service's final decision on whether export of these 1979–80 pelts should be allowed, subject to Court approval, was published in a separate Federal Register notice on September 12, 1980.

Information Considered

State agencies provided the Service with information about the population status and management of the seven species discussed in this notice. All such information is available for public inspection at the Office of the Scientific Authority (address given below). This notice briefly summarizes that information to indicate the basis for decisions on export of these species. No information is included in those cases where a State allows no harvest of a species or has no population of a species.

Information on American ginseng, bobcat, lynx, and river otter is summarized in the accompanying tables. Abbreviations used in the tables are as follows:

A—Export approved; export may occur under conditions set by the Service.
B—Biologist opinion.
CC—Collector comments.
DR—Dealer reports.
ET—Export tags.
FO—Field observations.
HR—Herbarium records.
HS—Hunter survey.
LS—Literature survey.
NEA—No export approved; available information does not support a finding in favor of export of the harvest.
NF—No export finding; bilogical information and management programs are inadequate to provide grounds for a finding on export.
SC—Survey of collectors.
SD—Survey of dealers.
T—Export approved, depending on receipt and approval by the Service of 1980–81 sample tags and/or tagging information. The Service notified such States of its need for these tags and/or information.
TR—Trapper or hunter reports, including tagging records.
TS—Trapper survey.

BILLING CODE 6560-01-M

Accordingly, the Service proposes to amend Parts 23 and 810 of Title 50, Code of Federal Regulations, as set forth below:

1. Add new Subparts E and F to Part 23 as follows:

PART 23—ENDANGERED SPECIES CONVENTION

Subpart E—Scientific Authority Advice [Reserved]

Subpart F—Export of Certain Species

Sec.

23.51 American ginseng *(Panax quinquefolius).*
23.52 Bobcat *(Lynx rufus).*
23.53 River otter *(Lutra canadensis).*
23.54 Lynx *(Lynx Canadensis).*
23.55 Gray wolf *(Canis lupus).*
23.56 Brown bear *(Ursus arctos).*
23.57 American alligator *(Alligator mississippiensis).*

Authority: Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*; 87 Stat. 884).

Subpart E—Scientific Authority Advice [Reserved]

Subpart F—Export of Certain Species

§ 23.51 American ginseng (Panax quinquefolius).

State populations for which the export of the indicated season's harvest may be permitted under § 23.15 of this Part 23:

(a) *1978 Harvest:* Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, New York, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin.

Conditions on findings: Roots must be documented as to state of origin and season of collecting.

For further information see: 43 FR 29469, July 7, 1978; 43 FR 35013, August 7, 1978; 43 FR 36293, August 16, 1978; and 43 FR 39305, September 1, 1978.

(b) *1979 Harvest:* Arkansas, Georgia, Illinois, Iowa, Kentucky, Maryland, Minnesota, Missouri, North Carolina, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin.

Conditions on findings: Roots must be documented as to state of origin and season of collecting. Wild roots must be certified by the State as legally collected. For further information see: 44 FR 25384; April 30, 1979; 44 FR 3107, June 1, 1979; and 44 FR 47912, August 15, 1979.

(c) *1980 Harvest:* Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, North Carolina, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin.

Conditions on findings: Roots must be documented as to state or origin and season of collecting. Wild and cultivated roots must be certified by the State as legally collected, and such certification must be presented upon export.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Parts 23 and 810

Final Findings for Export of American Alligator and American Ginseng Taken in 1980–81 Season

AGENCY: U.S. Fish and Wildlife Service.

ACTION: Notice of final findings.

SUMMARY: The Convention on International Trade in Endangered Species of Wild Fauna and Flora is a treaty regulating the international shipment of certain wildlife and plant species. Under the Convention, exports of wildlife or plants listed in Appendix I or II may occur only if a Scientific Authority has advised a permit-issuing Management Authority that such exports will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the wildlife or plants were not obtained in violation of laws for their protection.

The Service must make such decisions with respect to the American alligator and American ginseng, both of which are included in Appendix II. This notice announces the Scientific Authority and Management Authority decisions concerning export of specimens of these species taken in the 1980–81 season. These findings for export are made on a state-by-state basis for all specimens taken in a particular season, considering all available information on the population status, management and utilization of the species.

DATE: These final findings are effective on October 21, 1980.

ADDRESS: Please send correspondence concerning this notice to the Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Materials received will be available for public inspection from 7:45 a.m. to 4:15 p.m., Monday through Friday, in room 536, 1717 H Street, N.W., Washington, D.C.

FOR FURTHER INFORMATION CONTACT:

Biological findings.—Dr. Richard L. Jachowski, Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (202) 653–5948.

Export permits.—Mr. S. Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235–2418.

SUPPLEMENTARY INFORMATION: In carrying out the responsibilities of the United States under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Service is continuing the practice of developing general Scientific Authority and Management Authority findings on the export of certain species, applicable to all specimens taken in a particular season. This approach is more meaningful and less cumbersome than the alternative of developing findings on a permit-by-permit basis for species subject to extensive international trade.

The Service published proposed findings on the export of American alligators, American ginseng and certain other species in the September 29, 1980, **Federal Register** (45 FR 64520). That publication contained a summary of information supplied by state agencies on the biology, management, and harvest of ginseng, and it cited earlier references providing such information for the alligator.

American Ginseng (*Panax Quinquefolius*)

Criteria used by the Service in determining if the export of ginseng will not be detrimental to the survival of the species were the same as those used by the Endangered Species Scientific Authority (ESSA) in previous years:

The ESSA proposes to approve export of wild American ginseng from those states that have implemented substantial programs to conserve the species whose populations can support the harvest. Acceptable conservation programs generally must include some form of research and regulations designed to monitor the status of the state's wild populations to provide annual harvest estimates, and to control exploitation. The ESSA recognizes the recency of wild plant management in many states, and the frequent lack of management authority in state agencies. Consequently, we propose to approve export from certain states whose management agencies lack authority to limit exploitation provided those states have substantial plans for 1979 under existing authority and provided available information indicates that populations of the state can support the harvest. Several state agencies are seeking additional authority from their legislatures. The ESSA wishes to be supportive of new state programs, however, our proposal to approve export for roots harvested in 1979 should not be construed as a precedent for approval in the future.

Criteria used by the Service in determining if ginseng to be exported is not obtained in violation of state or Federal law, which is a Management Authority requirement under the CITES, were described in the September 29, 1980, **Federal Register**:

> The [Service] considers the following ongoing program operating on either a mandatory or voluntary basis to be necessary to qualify a state's ginseng for export. A mandatory program administered by the State is preferable to a voluntary one, but a functional voluntary one may be acceptable if the state is working toward regulatory control.
>
> 1. An ongoing, state sponsored, American ginseng research program;
> 2. State certification or registration of dealers and exporters;
> 3. A requirement that dealers and exporters maintain a record of their commerce in ginseng;
> 4. A limited taking season to be established by the state to foster survival of the species; and
> 5. A certificate of legal taking identifying dealer, origin, year of taking, whether wild or cultivated, and weight of the shipment, attached to each export from the state. (This is required only for each export, not for each transaction within the state. This certificate must be presented to Federal officials at the point of export from the United States.)

It should be noted that the Management Authority criteria also were used for decisions on the export of ginseng harvested last year, and that they included conditions (items 1 and 4, above) related to concerns of the ESSA. In view of this, the Service has focused on items 2, 3, and 5 in making Management Authority decisions this year. Further, as with Scientific Authority criteria, the Management Authority criteria are not all absolute requirements. A certificate of legal taking is required for each export. Voluntary state programs for the registration of dealers and exporters and voluntary record-keeping are acceptable if they work and if the states are taking steps to institute mandatory registration and record-keeping.

The Service received no written comments from the public in response to the proposed 1980 export findings for ginseng. Accordingly, the Service has determined that wild or artificially propagated ginseng harvested in those states proposed for approval in the September 29, 1980, notice may be exported under the CITES. States for which export of 1980 season ginseng is approved are: Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, North Carolina, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin. Both the Scientific Authority and Management Authority criteria are met for these states. The Management Authority will approve export of artificially propagated ginseng only from

the states listed above because they have the mandatory or voluntary programs necessary to document the source of the plants.

No export is approved for wild or artificially propagated ginseng harvested in other States during the 1980 season. There is no current information on which to base Scientific Authority or Management Authority findings for Alabama, Connecticut, Maine, Massachusetts, Mississippi, New Hampshire, Oklahoma, Rhode Island, South Carolina, and Vermont. Available evidence indicates that wild populations of ginseng cannot support a commercial harvest in Delaware, Louisiana, Michigan, Nebraska, and New Jersey, thus failing to satisfy one of the Scientific Authority criteria. Management Authority criteria also are not met by these states. Pennsylvania has wild populations of ginseng that might support a limited commercial harvest, but there are no current programs of research and regulation for the species at the state level. Consequently, neither Scientific Authority nor Management Authority criteria are met for this state. Ginseng is not reported to be native to any state other than those discussed above.

American alligator (*Alligator mississippiensis*)

The Service proposed to approve the export of alligators taken in Louisiana during the 1980 commercial harvest season and in Florida under the "nuisance" alligator control program during 1980 and 1981 (see 45 FR 64535). Approval of export was proposed in view of information showing increasing alligator populations in both states, and in view of ongoing programs in both states to monitor alligator populations and to strictly regulate the harvest. The Service received no written comments in response to this proposal. The available data demonstrate that export of alligators harvested this season in Louisiana and Florida will not be detrimental to the survival of the species. Controls on the harvest and subsequent commerce in alligators insure that hides to be exported are obtained in compliance with state and Federal law.

In addition, provided that any export of American alligators is in accordance with the Service's regulations (50 CFR 17.42), which require the licensing of foreign buyers and tanners, and provided that hides are properly tagged, there is assurance that their export would not diminish the effectiveness of the CITES in controlling trade in other crocodilians. There is no evidence to indicate that the export of alligator hides taken in 1979 or in previous seasons had any such effect.

Future Rulemaking

The present findings for ginseng and alligator are effective upon publication of this notice. Findings for the export of other Appendix II species discussed in the September 29, 1980, proposal will be published in a later notice. Upon publication of that notice, the Service intends to incorporate the decisions on export of all species subject to such general findings into Part 23 of Title 50, Code of Federal Regulations.

The findings announced in this notice are effective on the date of publication in the Federal Register, because the harvest season for these species has begun and delaying issuance of the findings could adversely impact state conservation programs for these species. The Service also considers a delay in the effective date to be unnecessary because the findings were preceded by an opportunity for comment and because they do not substantially modify an earlier procedure or practice (43 CFR 14.5).

An environmental assessment has been prepared in conjunction with this notice. It is on file in the Service's Office of the Scientific Authority, room 536, 1717 H Street, NW., Washington, D.C. and may be examined during regular business hours.

This notice was prepared by Dr. Richard L. Jachowski, Office of the Scientific Authority (202) 653–5948.

Note.—The Service has determined that this document does not contain a significant proposal requiring preparation of a regulatory analysis under Executive Order 12044 and 43 CFR Part 14.

Dated: October 17, 1980.

(Final findings for export of American Alligator and American Ginseng taken in 1980–81 season)

Lynn A. Greenwalt,

Director, Fish and Wildlife Service.

[FR Doc. 80-32948 Filed 10-20-80; 8:45 am]

BILLING CODE 4310-55-M

preferable in light of the specific problems in their jurisdictions. Accordingly, the Federal standard establishes only the minimum and States are permitted to specify more stringent requirements for their vehicles if they find it desirable.

Finally, it is necessary to put the issue of increased school bus safety in the proper perspective. Typically, fewer than 20 passengers of school buses are killed annually in school bus accidents. PAS points to a particular accident to justify this rulemaking petition. However, in that accident, 47 injuries were sustained and none was serious. Given the existing safety of school buses, further expense and Federal regulations are not warranted at this time. Accordingly, the agency has determined that the proposals made by PAS and ACTS are not necessary and denies their petition. The agency continues to monitor the school bus accidents and will propose additional safety standards if conditions warrant.

(Secs. 103, 119, Pub. L. 89-563, 80 Stat. 718 (15 U.S.C. 1391, 1407); delegation of authority at 49 CFR 1.50)

Issued on August 31, 1981.

Diane K. Steed,

Acting Administrator.

[FR Doc 81-26269 Filed 9-9-81; 8:45 am]

BILLING CODE 4910-59-M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 23

Export of Bobcat, Lynx, River Otter, Alaskan Gray Wolf, Alaskan Brown Bear, American Alligator and American Ginseng Taken in 1981-82 Season

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed findings and rule.

SUMMARY: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty regulating the international shipment of certain wildlife and plant species. Exports of wildlife or plants listed in Appendix II of CITES may occur if a Scientific Authority has advised a permit-issuing Management Authority that such exports will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the wildlife or plants were not obtained in violation of laws for its protection.

This notice announces proposed findings by the Scientific and Management Authorities for the United States concerning the export of certain Appendix II species native to this country. Such findings are made annually on a state-by-state basis. The Service requests information and comments concerning these findings before making final determinations on the export of specimens taken in the 1981-82 harvest season.

DATE: The Service will consider information and comments received by September 25, 1981, in making the final determinations.

ADDRESS: Please send correspondence concerning this notice to the Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Materials received will be available for public inspection from 7:45 a.m. to 4:15 p.m., Monday through Friday, at the Office of the Scientific Authority, room 536, 1717 H Street NW., Washington, D.C., or at the Federal Wildlife Permit Office, room 621, 1000 N. Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT:

Scientific Authority Findings—Dr. Richard L. Jachowski, Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (202) 653-5948.

Management Authority Findings—Mr. S. Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235-2418.

Export Permits—Mr. Robert J. Batky, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235-1903.

SUPPLEMENTARY INFORMATION: This is the second of three notices concerning the Service's findings on export of bobcat, lynx, river otter, Alaskan gray wolf, Alaskan brown bear, American alligator, and American ginseng taken in the 1981-82 harvest season. The first notice (46 FR 28192; May 26, 1981) announced the Service's intention to develop findings on export of specimens of these species, and invited comment on the criteria that it proposed to use in making such findings. In the present notice, the Service announces its preliminary findings. These are based on criteria described in the May 26, 1981, notice.

Scientific Authority Advice

The Service received comments from several state conservation agencies on the proposed criteria for Scientific Authority advice on the export of bobcats, lynx, and river otter. These agencies remarked that it is inappropriate to require an estimate of the state's populations of these species as a condition of export approval because such estimates are difficult to make and because they do not provide information useful to the state in managing these species.

The requirement for population estimates was established by the United States Court of Appeals for the District of Columbia Circuit. The court's decision, as described in the notice of May 26, 1981, applies to Scientific Authority advice on the export of bobcats taken in the 1981-82 season. The Service shares the concern of state agencies about the need for (and value of) population estimates; although it has considered population estimates in developing Scientific Authority advice on the export of other species, it has not considered such estimates to be essential for that advice.

The bobcat, lynx, river otter, and American alligator were listed in Appendix II for two reasons: Because the CITES party countries decided that they were potentially threatened with extinction unless international trade were controlled and because the parties agreed that trade in them should be regulated in order to effectively control trade in other listed species of cats, otters, or crocodilians, respectively. In developing Scientific Authority advice on whether export of these four species will not be detrimental, the Service is examining both the status of the species in question and the impact of trade in them on the effectiveness of CITES in controlling trade in other related species.

The Service has received no information that export of these species has reduced the effectiveness of CITES in controlling trade in other listed species. Similarly, the Service has received no evidence that export of Alaskan gray wolf or Alaskan brown bear has reduced the effectiveness of CITES in controlling trade in other listed wolves or bears. The Alaskan populations of wolf and brown/grizzly bear are listed in Appendix II only to enable the parties to effectively control trade in other listed populations. Accordingly, the Service has made a preliminary determination that export of bobcat, lynx, river otter, American alligator, Alaskan gray wolf, and Alaskan brown bear will not reduce the effectiveness of CITES in controlling trade in other listed species. This determination is reinforced by the Service's requirement that all pelts or hides of the species in question must have state tags, as described below. The Service's notice of proposed findings for the previous harvest season provides further discussion of the grounds for this

determination (45 FR 64520; September 29, 1980).

State conservation agencies have provided current information to the Service about biological status, harvest, and management and research programs for bobcat, lynx, river otter, American alligator, and American ginseng. The Service has evaluated this information in terms of whether export will not be detrimental to the survival of the species in question, using criteria described in the notice of May 28, 1981. Information from the states and records of the Service's evaluation of it are available for public inspection at the Office of the Scientific Authority.

Management Authority Findings

Several state conservation agencies commented that the Service should combine its requests to them for Scientific Authority and Management Authority information. The Service agrees, and will do so in the future. Aside from this comment, the Service received no suggestions concerning the proposed criteria for Management Authority findings on the export of species addressed in this notice.

The Management Authority must be satisfied that specimens were not obtained in violation of state or Federal law, in order to allow export. Evidence of legal taking for bobcat, lynx, river otter, Alaskan gray wolf, Alaskan brown bear, and American alligator is provided by state tagging systems. For the 1981–82 season, the Service has urged the use of locking globe-headed metal tags. The Service has arranged for the manufacturing of such tags for the majority of states. Other states already use similar tags. Those few states now able to use only substandard tags may use them for export this season, but must use fully acceptable tags next season.

Last year, the Service stated that the Management Authority would approve export of artificially propagated ginseng only from the states approved for export of wild-collected ginseng, because they had the programs necessary to document the source of the plants. The Service plans to continue this practice, but it will also approve the export of artificially propagated ginseng from other states if those states can provide similar documentation to minimize the risk that wild-collected plants are exported as cultivated.

Information from the states and records of the Service's evaluation of it in terms of Management Authority criteria are available for public inspection at the Federal Wildlife Permit Office.

Proposed Export Approval

The Service proposes to approve exports of these Appendix II species harvested during the 1981–82 season in the following states, on the grounds that both Scientific Authority and Management Authority criteria have been met:

Bobcat—Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Idaho, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New York, Oklahoma, Oregon, South Carolina, Utah, Vermont, Virginia, West Virginia, Wyoming, and Klamath Tribe.

Lynx—Alaska, Minnesota, and Montana.

River otter—Alabama, Alaska, Arkansas, Connecticut, Delaware, Florida, Georgia, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New York, Oregon, South Carolina, Vermont, and Virginia.

American alligator—Florida and Louisiana.

American ginseng—Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, North Carolina, Ohio, Tennessee, Vermont (artificially propagated ginseng only), Virginia, West Virginia, and Wisconsin.

The Service also proposes *not* to grant general approval for exports of these species harvested in the following states, which have received export approval in the past. After the name of each state, the letters SA or MA indicate that criteria of the Scientific Authority or Management Authority, respectively, are not met.

Bobcat—California (SA), Maine (MA), Nevada (MA), New Mexico (MA), North Carolina (MA), North Dakota (SA), Tennessee (MA), Texas (MA), Washington (MA), Wisconsin (MA), and Navajo Nation (SA).

Lynx—Idaho (SA) and Washington (MA).

River otter—Maine (MA), North Carolina (MA), and Wisconsin (MA).

Alaskan gray wolf—Alaska (MA).

Alaskan brown/grizzly bear—Alaska (MA).

American ginseng—Minnesota (SA), and New York (SA) and (MA). In most of these cases, the Service proposes not to approve export of wildlife species because the state has not yet provided current biological data (SA) or samples of tags it will use on pelts (MA). However, in the case of North Dakota, the Service believes that the condition of bobcat populations is such that export of the harvest allowed by the state management program could be detrimental to the survival of the species in the state.

For ginseng, the Service proposes not to approve export from Minnesota because the state has not yet provided information about either the population status or management of the species.

The Service proposes not to approve export of ginseng harvested in New York because the state is not yet implementing a management program and because information supplied on population status is insufficient to show that export will not be detrimental to the survival of the species in the state.

For all other states not addressed above, either the taking of these species is not allowed by the state, the species do not occur in the state, or the state did not provide the Service with information on which to base Scientific Authority and Managment Authority findings. The Service proposes not to grant general approval for export of these species from such states.

Comments Solicited

The Service requests comments and current information on the species addressed in this notice. Final findings will take into consideration the comments and any additional information received, and such consideration might lead to final findings that differ from this proposal.

The period for comment on this proposal is limited to 15 days because a longer period would be impracticable and contrary to the public interest (43 CFR 14.7). These findings are most valuable for conservation of the species if they are made before the harvest season begin.

This proposal is issued under authority of the Endangered Species Act of 1973 (16 U.S.C. et seq.; 87 Stat. 884 as amended), and was prepared by Dr. Richard L. Jachowski, Office of the Scientific Authority, telephone (202) 653–5948.

Note.—The Department has determined that this is not a major rule under Executive Order 12291 and does not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601).

Dated: August 14, 1981.

G. Ray Arnett,

Assistant Secretary for Fish and Wildlife and Parks.

Accordingly, the Service proposes to amend Part 23 of Title 50, Code of Federal Regulations, as set forth below:

PART 23—ENDANGERED SPECIES CONVENTION

Subpart F—Export of Certain Species

1. In § 23.51, add new paragraph (d) as follows:

§ 23.51 American ginseng (*Panax quinquefolius*).

* * * * *

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(d) 1981 Harvest: Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, North Carolina, Ohio, Tennessee, Virginia, West Virginia, Wisconsin.

Conditions on findings: Roots must be documented as to state or origin and season of collecting. Wild and cultivated roots must be certified by the state as legally collected and such certification must be presented upon export.

2. In § 23.52, add new paragraph (e) as follows:

§ 23.52 Bobcat (*Lynx rufus*)

* * * * *

(e) 1981–82 Harvest: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Idaho, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New York, Oklahoma, Oregon, South Carolina, Utah, Vermont, Virginia, West Virginia, Wyoming, Klamath Tribe.

Condition of findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service.

3. In § 23.53, add new paragraph (e) as follows:

§ 23.53 River otter (*Lutra canadensis*)

(e) 1981–82 Harvest: Alabama, Alaska, Arkansas, Connecticut, Delaware, Florida, Georgia, Louisana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New York, Oregon, South Carolina, Vermont, Virginia.

Condition on findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service.

4. In § 23.54, add new paragraph (e) as follows:

§ 23.54 Lynx (*Lynx canadensis*).

(e) 1981–82 Harvest: Alaska, Minnesota, Montana. Condition on findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service.

5. In § 23.55, add new paragraph (e) as follows:

§ 23.55 Gray wolf (*Canis lupus*).

* * * * *

(e) 1981–82 Harvest: None.

Condition on findings: Pelts must be tagged as required by the State of Alaska.

Condition on findings: Pelts must be tagged as required by the State of Alaska.

6. In § 23.56, add new paragraph (e) as follows:

§ 23.56 Brown bear (*Ursus arctos*).

* * * * *

(e) 1981–82 Harvest: None.

Condition on findings: Pelts must be tagged as required by the State of Alaska.

7. In § 23.57, add new paragraph (c) as follows:

§ 23.57 American alligator (*Alligator mississippiensis*).

* * * * *

(c) 1981–82 Harvest: Florida, Louisiana.

[FR Doc. 81-26370 Filed 9-9-81; 8:45 am]
BILLING CODE 4310-55-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 655, 656, and 657

Mid-Atlantic Fishery Management Council; Public Hearings

AGENCY: National Oceanic and Atmospheric Administration, Commerce.

ACTION: Notice of public hearing.

SUMMARY: The Mid-Atlantic Fishery Management Council will hold public hearings for the purpose of public input on Amendment No. 3 to the Fishery Management Plans for Squid, Atlantic Mackerel, and Butterfish.

DATES: Written comments on the amendment to the plans for squid, Atlantic mackerel, and butterfish from members of the public may be submitted no later than October 7, 1981.

Individuals or organizations wishing to comment on the above amendment may do so at public hearings to be held at the locations listed below:

September 28, 1981; Riverhead, New York

September 28, 1981; Cape May, New Jersey

September 29, 1981; Narragansett (Galilee), Rhode Island

September 30, 1981; Hampton, Virginia.

ADDRESS: Send comments to: Chairman, Mid-Atlantic Fishery Management Council, Room 2115, Federal Building, North and New Streets, Dover, Delaware 19901.

September 28, 1981; Holiday Inn, Rt. 25, Exit 72 of Long Island Expressway, Riverhead, New York 11901

September 28, 1981; Golden Eagle Inn, Philadelphia Avenue, Cape May, New Jersey 08204

September 29, 1981; Dutch Inn, Great Island Road, Narragansett (Galilee), Rhode Island 02882

September 30, 1981; Sheraton Inn Coliseum, 1215 West Mercury Boulevard, Exit 8 from I–64, Hampton, Virginia 23366.

All of the public hearings mentioned above will convene promptly at 7:00 p.m. Hearings will be tape recorded and the tapes will be filed as an official formal transcript of the proceedings. Summary minutes will be prepared on each hearing.

FOR FURTHER INFORMATION CONTACT: Mr. John C. Bryson, Executive Director, Mid-Atlantic Fishery Management Council, Room 2115, Federal Building, North and New Streets, Dover, Delaware 19901, Telephone 302–674–2331.

SUPPLEMENTARY INFORMATION: The Squid Fishery Management Plan (FMP) was approved by the National Oceanic and Atmospheric Administration (NOAA) on June 6, 1979. The FMP was for fishing year 1979–80 (April 1, 1979–March 21, 1980). Amendment No. 1, extending the FMP indefinitely beyond fishing year 1979–80, was approved by NOAA on March 19, 1980.

The Atlantic Mackerel FMP was approved by NOAA on July 3, 1979. The FMP was for fishing year 1979–80 (April 1, 1979–March 31, 1980). Amendent No. 1, extending the FMP through fishing year 1980–81, was approved by NOAA on March 17, 1980. Amendment No. 2, extending the FMP through fishing year 1981–82, was approved by NOAA on January 29, 1981.

The Butterfish FMP was approved by NOAA on November 9, 1979. The FMP was for fishing year 1979–80 (April 1, 1979–March 31, 1980). Amendent No. 1, extending the FMP through fishing year 1980–81, was approved by NOAA on March 5, 1980. Amendment No. 2, extending the FMP through fishing year 1981–82, was approved by NOAA on February 26, 1981.

The Mid-Atlantic Fishery Management Council recommends merging the Squid, Atlantic Mackerel, and Butterfish FMPs, extending them through fishing year 1984–85 (March 31, 1985), and revising the management regime.

The management unit is all Atlantic mackerel (*Scomber scombrus*), squid (*Loligo pealei* and *Illex illecebrosus*), and Atlantic butterfish (*Peprilus triacanthus*) under U.S. jurisdiction.

The permitting and reporting requirements of the existing Atlantic Mackerel, Squid, and Butterfish Plans would be combined and revised to permit data collection by means other than logbooks.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 23

Export of Bobcat, Lynx, River Otter, Alaskan Gray Wolf, Alaskan Brown Bear, American Alligator, and American Ginseng Taken in 1981–82 Season

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final findings and rule.

SUMMARY: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty regulating the international shipment of certain wildlife and plant species. Exports of wildlife or plants listed in Appendix II of CITES may occur if a Scientific Authority has advised a permit-issuing Management Authority that such exports will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the wildlife or plants were not obtained in violation of laws for their protection.

This notice announces final findings by the Scientific and Management Authorities for the United States concerning the export of certain Appendix II species native to this country. These are final determinations on the export of specimens taken in the 1981–82 harvest season. Such findings are made annually on a state-by-state basis.

DATE: These findings are effective for all species except bobcat on October 14, 1981. Effectiveness of the bobcat findings is delayed at least 60 days so that the Service may seek vacation of the injunction issued by the United States District Court for the District of Columbia prohibiting the Service from authorizing export of bobcat until it promulgates new guidelines and makes findings on the basis for those guidelines.

ADDRESS: Please send correspondence concerning this notice to the Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Materials received will be available for public inspection from 7:45 a.m. to 4:15 p.m., Monday through Friday, at the Office of the Scientific Authority, room 536, 1717 H Street, NW., Washington, D.C., or at the Federal Wildlife Permit Office, room 621, 1000 N. Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT:

Scientific Authority Findings—Dr. Richard L. Jachowski, Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (202) 653–5948.

Management Authority Findings—Mr. S. Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235–2418.

Export Permits—Mr. Robert J. Batky, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235–1903.

SUPPLEMENTARY INFORMATION: This is the last of three notices concerning the Service's findings on export of bobcat, lynx, river otter, Alaskan gray wolf, Alaskan brown bear, American alligator, and American ginseng taken in the 1981–82 season. The first notice (46 FR 28192; May 26, 1981) announced the Service's intention to develop findings on export of specimens of these species, and invited comment on the new criteria, developed in part as a result of the ruling of the United States Court of Appeals in Defenders of Wildlife vs. Endangered Species Scientific Authority, that it proposed to use in making such findings. The second notice (46 FR 45172; September 10, 1981) discussed comments received on the criteria and announced the proposed export findings for each species on a state-by-state basis. The present notice establishes final export findings for these species, based on current information about their population status, management, and utilization.

Scientific Authority Advice

CITES regulates international trade in species included in Appendix II through a system of permits issued by designated Management Authorities in each party nation. Export permits are to be issued only if a Management Authority receives advice from a Scientific Authority that the export will not be detrimental to the survival of the species.

The Endangered Species Act of 1973, as amended in 1979, designates the Secretary of the Interior as both Management Authority and Scientific Authority of the United States, for purposes of CITES. These functions are carried out by the Fish and Wildlife Service. Management Authority responsibilities are delegated to the Associate Director—Federal Assistance. Scientific Authority responsibilities are delegated to the Associate Director—Research.

Criteria for Scientific Authority advice were elaborated in the May 26, 1981, **Federal Register**. Advice on the export of species addressed in these findings is given in a general way, applicable to any specimens harvested in particular states in a given season, rather than on a permit-by-permit basis. The reasons for this practice are that (1) the individual exporters who apply for permits are unable to supply much information about the sources of specimens or the effect of their harvest on the populations of the species, (2) the species in question are subject to commercial exploitation, and it would be burdensome to both the industry and the Service to make separate Scientific Authority decisions on each of the many permits, and (3) the development of general advice on a state-by-state basis enables the Service to conduct a comprehensive review of the status of the species in question and the effect of international trade on its survival. Advice based on such a review is more meaningful than it would be if it were based only on information supplied in connection with individual permit requests.

Criteria used by the Service in determining if export of bobcat, lynx, river otter, American alligator, and American ginseng will not be detrimental to the survival of the species are as follows:

1. Whether similar export has occurred in the past and has not reduced the numbers or distribution of the species, nor caused signs of ecological or behavioral stress within the species, or in other species of the affected ecosystem.

2. Whether life history parameters of the species and the structure and function of its ecosystem indicate that the present frequency of export will not appreciably reduce the numbers or distribution of the species, nor cause signs of ecological or behavioral stress within the species or in other species of the affected ecosystem.

3. Whether such export is expected to increase, decrease, or remain constant in frequency.

In using these general criteria, the Service adopted minimum requirements, previously used by the ESSA, in giving such advice on export of bobcat, lynx, and river otter. These requirements were recommended by a working group of wildlife biologists convened by the ESSA in 1977 and are as follows:

A. Minimum requirements for biological information:

(1) Population trend information, the method of determination to be a matter of state choice.

(2) Information on total harvest of the species.

(3) Information on distribution of harvest.

(4) Habitat evaluation.

B. Minimum requirements for a management program:

(1) There should be a controlled harvest, methods and seasons to be a matter of state choice.

(2) All pelts should be registered and marked.

(3) Harvest level objective should be determined annually.

In the case of the bobcat, the Service is giving Scientific Authority advice in accordance with additional requirements established by the United States Court of Appeals for the District of Columbia Circuit. Defenders of Wildlife, Inc., challenged the use of criteria listed above for bobcat exports in a suit brought against the ESSA and the Department of the Interior. On February 3, 1981, the United States Court of Appeals for the District of Columbia Circuit held that the requirements set forth above are invalid to the extent they authorize findings that export of bobcats would not be detrimental to the survival of the species when such findings are not based on reliable estimates of the bobcat population and data showing the total number of bobcats to be killed, in each of the states involved. The Court of Appeals remanded the case to the District Court for findings of fact and conclusions of law consistent with its opinion.

On remand, with the agreement of the parties, the District Court dismissed the case as it pertained to export of bobcat taken during previous seasons and enjoined the Service from authorizing export of bobcat taken subsequent to July 1, 1981, until it promulgated guidelines consistent with the Court of Appeals decision and made findings based upon those guidelines.

In compliance with that injunction dated April 22, 1981, the Service's May 26, 1981, notice required the states to submit data necessary to obtain reliable population estimates and data concerning the number of bobcat to be killed. The Service noted, however, that advice based solely on the court's requirements would be incomplete and that it is important to consider certain other types of information that the Service has sought in the past. Scientific Authority advice on exports of bobcats taken in the 1981–82 season is, therefore, based both on an assessment of the size of the projected 1981–82 harvest in relation to total population size, and on the other criteria listed above.

The Defenders of Wildlife, Inc., submitted extensive comments on the proposed advice for the export of bobcats. The Service received no other comments on the proposed export findings. Defenders stated that the Service failed to establish guidelines for the proposed Scientific Authority advice or to explain the methods used in formulating this advice. Defenders had previously submitted comments, dated June 24, 1981, on the May 26, 1981, notice which similarly contended that the Service had not established the necessary guidelines. But, as the Service stated in response to Defenders' June comments, the May 26, 1981, notice did announce the Service's new export requirements and invited comments on them. The Service believes that the criteria discussed in the May 26, 1981, notice and specification of types of information needed from states provide the guidelines by the Appellate and District Courts.

The Service, in addition to its previous requirements, asked for the following specific information from each state and Indian Nation that exports bobcat pelts:

1. Biological Information

a. An estimate of the size of the statewide population, including a description of (i) how it is calculated, with an indication of the geographic areas where data used in the calculations were gathered, (ii) how it accommodates differences in abundance over the range of habitat occupied by the species, and (iii) the confidence limits on the estimate.

b. A description of any research being conducted to assess the distribution, abundance, or general condition of the species in the state. Please briefly summarize results so far obtained, including results of any analyses of age structure or reproductive parameters.

c. A description of any population models being used in the state to evaluate the status of the species.

d. An assessment of long-term population trends of the species in the state, and the relationship of these trends to habitat condition, management practices, harvesting pressure, prey abundance, or other factors.

2. Management Program

a. Harvest level objective for the 1981–82 season (anticipated total statewide harvest of the species). Please describe (i) how this figure is derived, and (ii) how biological information is used in setting the harvest level objective.

b. A description of methods used to insure that the actual harvest will not substantially exceed the harvest level objective.

c. A copy of current state regulations governing harvest, possession, transport, and sale of the species. Please indicate any changes to be made for the 1981–82 season.

3. Harvest Information for the Previous 1980–81 Season

a. Number of animals (listed by county or game management unit, if data are available at these local levels) that were (i) harvested, (ii) tagged, and (iii) bought by dealers operating in the state. Please also give the total number of animals that were harvested and tagged in the 1979–80 season in the state.

b. Number of licensed trappers in the state, and number of these trappers setting for the species in question. Please provide any available information on harvest per unit effort.

c. Prices paid to trappers for pelts of the species, including the average price and the range of extremes.

The Service also believes that data submitted by the states, as well as that collected by the Service, fully support its export findings. The Service has summarized this information in publically available documents explaining the Scientific Authority advice for each state.

The Service is confident that bobcat population and other relevant data obtained from the states or elsewhere enable sufficiently reliable population estimates. In population dynamics, many parameters, besides population size, have to be analyzed to determine the stability of a species. Biological data such as age class structure, reproductive parameters, and habitat evaluation, have to be taken into consideration in determining if export of bobcats will not be detrimental. The Service analyzed all of these parameters in determining whether the export of bobcat pelts would not be detrimental. The reliability of state bobcat population estimates was considered in relation to such biological data.

Defenders also stated that the Service failed to establish the number of bobcats which may be killed. The Court of Appeals stated "We do not see how, without adequate information on total bobcat populations and the number to be killed in a particular season, the Scientific Authority can make a valid determination of nondetriment." Most states set a harvest level objective for the 1981–82 season. Based on past harvest trends, available habitat, density and distribution information, states set their season lengths, bag limits, quotas, and restricted areas to limit the harvest. Each state allowing a harvest has established regulations and management programs to prevent the overharvest of bobcats. The states

usually set a harvest level objective that is equivalent to about 10% to 20% of the population. These figures on harvest level objective provide the best available measure of the number of bobcats to be harvested.

Defenders proposed their own guidelines for evaluating population estimates, of which one tenet is that a population estimate should be derived exclusive of harvest data. However, for the purpose of regulating the harvest of a wildlife population certain types of data, such as age/sex ratios, are very important and can be obtained only from harvested animals. Harvest data can be useful to predict trends of an expanding or shrinking population. Many states with a closed season lack useful population information of types gathered by other states in which a controlled harvest is allowed.

CITES provides that species may be listed in Appendix II for two reasons: because the species is potentially threatened by international trade, or because international trade in the species must be regulated in order to effectively control trade in another species. The latter type of listing is generally to control trade in species whose appearance either whole, in parts (skins, etc.), or as manufactured products closely resembles that of other endangered or potentially threatened species. The bobcat, lynx, river otter, and American alligator were listed for a combination of these two reasons. The Alaskan populations of gray wolf and brown bear were listed only for the latter reason (similarity in appearance). Accordingly, the Service has considered the impact of trade in these species on the effectiveness of CITES in controlling trade in other related species or populations, in determining conditions under which export may be allowed.

The Service has received no information to indicate that the export of species named above has reduced the effectiveness of CITES in controlling trade in other listed species or populations. Marking requirements, described below in connection with Management Authority findings, help to minimize problems of identification caused by similarity in appearance.

Scientific Authority criteria for the export of ginseng are described in the proposal (46 FR 45172; September 10, 1981). The Service is advising on whether export of ginseng will not be detrimental to the survival of the species by evaluating (1) information from each state on past, present, and potential geographic distribution, relative frequency, local abundance, population trends, and harvest intensities on a county-by-county basis, and (2) state research and management programs for this species, including a limited harvest season.

Management Authority Findings

Exports of Appendix II species are to be allowed under CITES only if a Scientific Authority has advised that they will not be detrimental to the survival of the species, and only if a Management Authority is satisified that the specimens were not obtained in contravention of laws for the protection of wildlife or plants.

The Service, therefore, must be satisfied that specimens were not obtained in violation of state or Federal law, in order to allow export. Evidence of legal taking for bobcat, lynx, river otter, Alaskan gray wolf, Alaskan brown bear, and American alligator is provided by state tagging systems. For the 1981–82 season, the Service has urged the use of locking globe-headed metal tags. The Service has arranged for the manufacturing of such tags for the majority of states. Other states already use similar tags. Those few states now able to use only other types of tags may use them for export this season, but must use tags of the specified type by next season.

The Management Authority criteria for approval of ginseng exports, on a state-by-state basis, are that the state has adopted the following measures: (1) State certification of dealers purchasing ginseng in the state, (2) state requirements that such dealers maintain records of their commerce in ginseng, (3) state requirements that dealers report ginseng commerce to qualify for state dealer certification, and (4) state certification to authenticate that the ginseng was lawfully taken from wild or cultivated sources.

Last year, the Service announced that the Management Authority would approve export of artificially propagated ginseng only from the states approved for export of wild-collected ginseng, because they had the programs necessary to document the source of the plants (45 FR 80444; December 4, 1980). The Service is continuing this practice, but it will also approve the export of artificially propagated ginseng from other states if those states can provide similar documentation to minimize the risk that wild-collected plants are exported as cultivated.

Export Approval

The Service approves exports of these species lawfully taken during the 1981–82 season in the following states, on the grounds that both Scientific Authority and Management Authority criteria have been met:

Bobcat—Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Utah, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Klamath Tribe, Navajo Nation.

Lynx—Alaska, Idaho, Minnesota, Montana, Washington.

River otter—Alabama, Alaska, Arizona, Connecticut, Delaware, Florida, Georgia, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New York, North Carolina, Oregon, South Carolina, Vermont, Virginia, Washington, Wisconsin.

Alaskan gray wolf—Alaska.

Alaskan brown bear—Alaska.

American alligator—Florida and Louisiana.

American ginseng—Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, North Carolina, Ohio, Tennessee, Vermont (artificially propagated ginseng only), Virginia, West Virginia, and Wisconsin.

The Service does not grant general approval for exports of these species taken from any other state during the 1981–82 season. Two states provided information that did not meet the Service's Scientific Authority criteria: North Dakota for bobcat and New York for ginseng. In the case of North Dakota, the state provided no bobcat population estimate, there has been a decrease in harvest, and age ratios indicate that too many adults are being removed from the population.

In the case of New York, there has been a substantial reduction in historical range and decline in populations of wild ginseng, including many countrywide extirpations, and there are no substantive data on current population status and trends.

For all other states not named above, either the taking of these species is not allowed by the state during the 1981–82 season, the species do not occur in the state, or the state did not provide the Service with information on which to base Scientific Authority and Management Authority findings. The Service does not grant general approval for international export of these species from such states.

Information from states and records of the Service's evaluation of it are available for public inspection at the Office of the Scientific Authority (for Scientific Authority advice) or at the Federal Wildlife Permit Office (for Management Authority findings).

The findings announced in this notice are effective immediately, because the harvest season has already begun in some states, and delaying issuance of

the findings could adversely impact state conservation programs for these species. The Service also considers a delay in the effective date to be unnecessary because the findings were preceded by an opportunity for comment and because they do not substantially modify an earlier procedure or practice.

This rule is issued under authority of the Endangered Species Act of 1973 (16 U.S.C. et seq.; 87 Stat. 884 as amended), and was prepared by Dr. Richard L. Jachowski, Office of the Scientific Authority, telephone (202) 653–5948.

Accordingly, Part 23 of Title 50, Code of Federal Regulations, is amended as set forth below:

PART 23—ENDANGERED SPECIES CONVENTION

Subpart F—Export of Certain Species

1. In § 23.51, add new paragraph (d) as follows:

§ 23.51 American ginseng (Panax quinquefolius).

* * * * *

(d) *1981 Harvest:* Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, North Carolina, Ohio, Tennessee, Vermont (artificially propagated ginseng only), Virginia, West Virginia, Wisconsin.

Condition on findings: Roots must be documented as to state of origin and season of collecting. Wild and cultivated roots must be certified by the state as legally collected and such certification must be presented upon export. Vermont is approved for export of artificially propagated ginseng roots only.

2. In § 23.52, add new paragraph (e) as follows:

§ 23.52 Bobcat (Lynx rufus).

* * * * *

(e) *1981–82 Harvest:* Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Klamath Tribe, Navajo Nation.

Condition on findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service. The States of Nebraska, New Mexico, North Carolina, and Utah should not exceed their harvest level objectives for the 1981–82 season.

3. In § 23.53, add new paragraph (e) as follows:

§ 23.53 River otter (Lutra canadensis).

* * * * *

(e) *1981–82 Harvest:* Alabama, Alaska, Arkansas, Connecticut, Delaware, Florida, Georgia, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New York, North Carolina, Oregon, South Carolina, Vermont, Virginia, Washington, Wisconsin.

Condition on findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service.

4. In § 23.54, add new paragraph (e) as follows:

§ 23.54 Lynx (Lynx canadensis).

* * * * *

(e) *1981–82 Harvest:* Alaska, Idaho, Minnesota, Montana, Washington.

Condition on findings: Pelts must be clearly identified as to state of origin and season of taking, including tagging according to conditions established by the Service.

5. In § 23.55, add new paragraph (e) as follows:

§ 23.55 Gray wolf (Canis lupus).

* * * * *

(e) *1981–82 Harvest:* Alaska.

Condition on findings: Pelts must be tagged as required by the State of Alaska.

6. In § 23.56, add new paragraph (e) as follows:

§ 23.56 Brown bear (Ursus arctos).

* * * * *

(e) *1981–82 Harvest:* Alaska.

Condition on findings: Pelts must be tagged as required by the State of Alaska.

7. In § 23.57, add new paragraph (c) as follows:

§ 23.57 American alligator (Alligator mississippiensis).

* * * * *

(c) *1981–82 Harvest:* Florida, Louisiana.

Based on a review and evaluation of information contained in the attached Environmental Impact Assessments, I have determined that the final findings on the export of certain CITES Appendix II species taken in the 1981–82 season are not a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969. Accordingly, the preparation of an Environmental Impact Statement on this proposal is not required.

Note.—The Department has determined that this is not a major rule under Executive Order 12291 and does not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601).

Dated: October 8, 1981.

Ric Davidge,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 81-29789 Filed 10-13-81; 8:45 am]

BILLING CODE 4310-55-M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 23

Export of Bobcat, Lynx, River Otter, Alaskan Gray Wolf, Alaskan Brown Bear, American Alligator, and American Ginseng Taken in 1982–83 Season

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to propose findings.

SUMMARY: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates the international trade in certain animal and plant species. Exports of animals and plants listed in Appendix II of CITES may only occur if a Scientific Authority has advised a permit-issuing Management Authority that such exports will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the animals or plants were not obtained in violation of laws for their protection.

This notice announces the Service's intent to propose findings by Scientific and Management Authorities of the United States on the export of certain Appendix II species native to this country. Such findings have been made annually on a State-by-State basis. The Service requests comments on guidelines for these findings and information on the species involved. The Service also requests information on environmental and economic impacts that might result from the findings, and information on possible alternative approaches to meeting CITES requirements.

DATE: The Service will consider information and comments received by May 7, 1982, in making its proposed findings and rule.

ADDRESS: Please send correspondence concerning this notice to the office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Materials received will be available for public inspection from 7:45 a.m. to 4:15 p.m., Monday through Friday, at the Office of the Scientific Authority, room 536, 1717 H Street, N.W., Washington, D.C., or at the Federal Wildlife Permit Office, room 612, 1000 N. Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT:

Scientific Authority—Dr. Richard L. Jachowski, Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (202) 653–5948.

Management Authority—Mr. S. Ronald Singer, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235–2418.

Export Permits—Mr. Robert J. Batky, Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (703) 235–1903.

SUPPLEMENTARY INFORMATION: This is the first in a series of notices concerning the Service's findings on export of bobcat (*Lynx rufus*), Lynx (*Lynx canadensis*), river otter (*Lutra canadensis*), Alaskan gray wolf (*Canis lupus*), Alaskan brown bear (*Ursus arctos*), American alligator (*Alligator mississippiensis*), and American ginseng (*Panax quinquefolius*) taken in the 1982–83 harvest season. In this notice, the Service requests current information on the status of these species and comments on guidelines to be used in making Scientific Authority findings on whether export will not be detrimental to the survival of the species, and for Management Authority findings on whether animals or plants were not obtained in violation of laws for their protection.

Scientific Authority Findings

General criteria used by the Scientific Authority in advising on whether export will not be detrimental to the survival of the species are as follows (see 45 FR 46464; July 10, 1980):

1. Whether similar export has occurred in the past, and has not reduced the numbers or distribution of the species, nor caused signs of ecological or behavioral stress within the species, or in other species of the affected ecosystem.

2. Whether life history parameters of the species and the structure and function of its ecosystem indicate that the present frequency of export will not appreciably reduce the numbers or distribution of the species, nor cause signs of ecological or behavioral stress within the species or in other species of the affected ecosystem.

3. Whether such export is expected to increase, decrease, or remain constant in frequency.

The U.S. Court of Appeals for the District of Columbia has ruled, however, that bobcat exports should not be permitted under CITES unless the Service's Scientific Authority findings were based on "reliable estimates of the bobcat population and data showing the total number of bobcats to be killed, in each of the States involved."

To comply with this ruling, the Service proposes in this notice to follow certain guidelines in making export determinations under the general criteria described above. In order to avoid complicating the process, the Service intends to use the same general guidelines for the lynx, river otter, and American alligator as for the bobcat. The proposed guidelines are:

1. A current estimate of the total number of animals in the preharvest population is to be developed for each affected State, derived by (a) extrapolating the number of animals per unit area in each of the major habitat types to obtain an estimate of the total number of animals in the State, where the number of animals per unit area is determined by direct count, (e.g., by using radio tracking) or by indirect indictions of abundance (e.g., track counts, scented track plots, hunter-trapper surveys, and/or harvest records); or (b) by using population modeling (e.g., calculating population size from data on recruitment, mortality, sex ratio, age composition, or other parameters).

2. An upper limit on the total number of animals that can be harvested without detriment to the survival of the species is to be developed for each affected State, considering such factors as (a) population trends, (b) sizes of past harvests, (c) age composition and sex ratio of harvested animals, and (d) prey abundance.

3. Export would be deemed nondetrimental only for animals taken in those States for which there were (a) a preharvest population estimate that the Service determines to be reliable, either statistically, or by use of population models, or by comparison to other indications of abundance, and (b) a management program within the State that can prevent the total harvest from exceeding an amount that the Service determines can be harvested without detriment to the survival of the species. This level generally would not be allowed to exceed 20 percent of the estimated total preharvest population, although the allowable percentage would be adjusted for each State in view of factors such as those mentioned in paragraph 2 above, and in view of the reliability of the population estimate.

The guidelines respond to criticisms in the district court decision which recently held that the Service's decision-making methodology for making findings for the 1981–82 season did not comply with the Court of Appeals decision. The newly proposed guidelines describe acceptable methodologies for making population estimates and how the

Service will assess reliability. The guidelines make it clear that a reliable population estimate is a prerequisite to a finding that export will not be detrimental to the survival of the species. They also describe considerations underlying allowable kill levels and make the determination of such levels a requirement for a no detriment finding.

The Service recognizes that these guidelines might not be feasible in each State for lynx, river otter, and American alligator. Presently, they are required only for bobcat because of the court ruling. Information other than population estimates is generally used to determine the status of wildlife populations and the extent they are impacted by harvest. Most furbearers and other game species are managed on the basis of information that provides an indirect measure of their status, rather than on the basis of population estimates. Harvests generally are limited by restricting the length and timing of the season and by imposing bag limits, rather than by setting annual Statewide quotas. The Service invites comment on how best to take these considerations into account in establishing guidelines for export of lynx, river otter, and American alligator.

CITES provides that species may be listed in Appendix II for two reasons: because the species is potentially threatened by international trade, or because international trade in the species must be regulated in order to effectively control trade in another species. The latter type of listing is generally to control trade in species whose appearance either as whole specimens, as parts (skins, etc.), or as manufactured products closely resembles that of other endangered or potentially threatened species. The bobcat, lynx, river otter, and American alligator were listed for a combination of these two reasons. The Alaskan populations of gray wolf and brown bear were listed only for the latter reason (similarity in appearance). Accordingly, the Service will consider the impact of trade in these species on the effectiveness of CITES in controlling trade in other related species or populations when determining conditions under which export may be allowed.

The Service intends to use the same general criteria as were used last year in determining if exports of American ginseng will not be deterimental to the survival of the species (46 FR 45172; September 10, 1981). The Service would make this determination by evaluating (1) information from each State on past, present, and potential geographic distribution, relative frequency, local abundance, population trends, and harvest intensities on a county-by-county basis, and (2) State research and management programs for this species, including a limited harvest season.

A great increase in exports of American ginseng seed in the past year suggests that State management efforts should focus on seeds as well as roots, in the interest of conserving this species.

The Service has found that the status of wild ginseng does not vary greatly from year to year within any given State, and it believes that information compiled so far might be adequate to justify multi-year findings under CITES.

If the Service were to make multi-year findings, it would continue to monitor the status of ginseng each year, and would maintain the option of revising the findings at any time if new information showed compelling need for such a change.

Management Authority Findings

Exports of Appendix II species are to be allowed under CITES only if a Scientific Authority has advised that they will not be detrimental to the survival of the species, and if a Management Authority is satisfied that the animals or plants were not obtained in contravention of laws for their protection. Evidence of legal taking for bobcat, lynx, river otter, Alaskan gray wolf, Alaskan brown bear, and American alligator is provided by State tagging systems. For the 1982–83 season, the Service plans to continue requiring the use of self-locking, permanent tags marked to specify State, year of take, species, and a serial number. The Service has arranged for the manufacture of such tags for the majority of States in 1981. Other States already use similar tags. Those few States that were able to use only other types of tags last season must use tags of the type specified by the Service in the 1982–83 season. These States have previously been notified of this 1982 requirement. For the 1982–83 season, the Service plans to require that all pelts harvested must be permanently tagged by State personnel; otherwise, limits on total harvest cannot be enforced.

Management Authority criteria for approval of American ginseng exports, on a State-by-State basis, are that the State has adopted the following regulatory measures: (1) State certification of dealers purchasing ginseng in the State, (2) requirements that such dealers maintain records of their commerce in ginseng and report their ginseng commerce to the State at specified intervals, and (3) State certification of ginseng shipments to authenticate that the ginseng was lawfully taken from wild or cultivated sources within the State.

In 1980, the Service announced that the Management Authority would approve export of artificially propagated ginseng only from the States approved for export of wild-collected ginseng, because they had the programs necessary to document the source of the plants (45 FR 80444; December 4, 1980). The Service is continuing this practice, but it will also approve the export of artificially propagated ginseng from other States if they can provide similar documentation to minimize the risk that wild-collected plants are exported as cultivated.

In making a export finding for a particular State, the Service exercises its own independent judgement as required by CITES. Still, in recognition of the fact that the responsibility and authority for conservation of "resident species" (as opposed to migratory species) lies primarily with the States, the Service prefers to make export determinations only after providing the States with an opportunity to provide it with relevant information. Consequently, for bobcat, lynx, river otter, and American alligator, the Service seeks the following information regarding each affected State:

1. A preharvest estimate of the size of the Statewide population based on densities of animals in various habitat types or on population modeling, together with (i) the data used in calculating this estimate, (ii) the sources of those data, and (iii) the statistical confidence limits on the estimate.

Please briefly summarize any research being conducted to assess the distribution, abundance, or general condition of the species in the State.

2. Total Statewide harvest of the species expected to be allowed by the State in the 1982–83 season, together with an explanation of the biological basis for this figure. The explanation should include an assessment of long-term population trends of the species in the State, and the relationship of these trends to habitat condition, management pratices, harvesting pressure, prey abundance, or other factors.

3. A description of methods used by the State to insure that the actual harvest will not exceed the total allowable harvest.

4. A copy of current State regulations governing harvest, possession, transport, and sale of the species, including tagging requirements and samples of actual tags.

5. Statewide harvest information for the previous 1981–82 season:

a. Number of animals that were: (i) Harvested (listed by coun[illegible]ame management unit, if data are available at these local levels), (ii) tagged, and (iii) bought by dealers operating in the State.

b. Number of licensed trappers in the State and number of these trappers setting for the species in question. Please provide any available information on harvest per unit effort.

c. Prices paid to trappers for pelts of the species, including the average price and range of extremes.

6. Name, address, and telephone number of the State staff person to contact concerning these information needs.

For Alaskan gray wolf and Alaskan brown bear, the Services seeks only the information listed in items 4, 5a, and 6.

For American ginseng, the Service seeks the following information regarding each affected State:

1. Historic, present, and potential distribution of ginseng on a county basis, using county outline maps, and indicating the source(s) and accuracy of this information. Include also the distribution of preferred habitat on a regional or Statewide basis, indicating recent trends in loss or protection of habitat.

2. Approximate number or density of ginseng populations per county or region, and the approximate number of all known ginseng localities in the State, including also the source of this information.

3. Average population size (i.e., "stand" or "patch") or local abundance of wild ginseng on a county or regional basis in the State, indicating the source(s), general reliability and accuracy of the information. Include also any changes from previous years or differences form historical population sizes.

4. An assessment of population trends on a county or regional basis indicating whether populations of ginseng are believed to be increasing, decreasing, stable, extirpated or unknown. Include source(s) and general reliability and accuracy of this information.

5. Assessment of harvest intensity on a county or regional basis indicating whether the relative intensity is heavy, moderate, light, none, or unknown, and any changes from previous years. Provide also the known or estimated number of ginseng collectors in the State.

6. A county map showing those counties in which ginseng is reported to be commercially cultivated. Include figures on the amount of cutlivated ginseng reported to be harvested and certified for export Statewide.

7. Average number of roots per pound harvested, preferably on a county or regional basis or, if these are not available, on a Statewide basis. Include also an assessment of any trend in root sizes or number of roots per pound over previous years.

8. Describe the State's current research program on ginseng and its progress, including a summary of results so far obtained.

9. Describe harvest practices, including regulations on length of harvest season, any harvest restrictions such as size and age of collected plants, and any seed planting requirements.

10. Supply copy of State law or regulations on: (a) State registration of dealers (cost of registration, season of operation for dealers), (b) dealer maintenance of records, (c) dealer reporting system of ginseng commerce, (d) State certification of legal ginseng take, (e) samples of 1982 dealer certificates and (f) samples of diggers license, giving cost of license and dates of harvest season.

11. Describe State official certification system for wild and cultivated ginseng legally harvested within the State, including controls to minimize uncertified ginseng from moving into or from the State.

12. Name, address, and telephone number of the State staff person to contact concerning those information needs.

For each species, information that has been provided in the past need not be resubmitted, provided it is cited and its validity is affirmed. However, items 1–3 for bobcat, lynx, river otter, and alligator are new requests for information not previously sought.

Schedule

The Service intends to publish final findings in advance of the 1982–83 harvest season. The planned Schedule is as follows:

May 1982—Publish notice of proposed findings and rule, and invite public comment;

August 1982—Publish notice of final findings and rule, effective upon the date of publication.

Request for Information

The Service requests comments on the guidelines to be used in Scientific Authority and Management Authority findings, and information on the species in question. The service also requests information on environmental and economic impacts and effects on small entities (including small businesses, small organizations, and small governmental jurisdictions) that would result from such findings, either in favor of export or against it. This information will aid the Service in complying with requirements of the National Environmental Policy Act, Executive Order 12291, and the Regulatory Flexibility Act, and in preparing any required analyses of effect.

Dated: March 26, 1982.

J. Craig Potter,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 82-9094 Filed 4-2-82; 8:45 am]

BILLING CODE 4310-55-M

State Alabama

ICAC Summary, GINSENG

Date: August 30, 1977

American Ginseng

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Alabama.

Mohr (see 44, also 45) in 1890 noted that American ginseng was: "Not infrequent in rich woods through N. half of the State. Commanding a high market price, considerable quantities are exported from the mountainous region of the Tennessee basin." More recently, Delcourt and Delcourt (see 46) noted herbarium records for four counties and literature references to two additional counties.

American ginseng is included as an endangered species in "Endangered and Threatened Plants and Animals of Alabama" (see 47). Steve Guy, Alabama State Forester's Office, stated orally that American ginseng is restricted to northern Alabama and that it is rare.

The MA has forwarded to the ESSA one permit application for international export of wild American ginseng collected in Alabama.

In addition, Alabama has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. **Negative.**

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Alabama	U	--	--	Endangered[1/]	--	NEA	No anticipated management program.
				"Good numbers" in North[2/]	B		

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Alabama	N				Endangered [1]		NEA	State comments for 1979 not yet received
					"Good numbers" in north? [2]	B		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Alabama	C				Endangered[1] "Good numbers" in north.[2]	B	NF	The State has initiated a voluntary program to monitor the harvest.

September 29, 1980

Table 1. American Ginseng Export Findings for 1980 Harvest Season

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Alabama (NF)					NEA

State Arkansas

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Arkansas.

Crow (see 50) noted in the "Arkansas Natural Area Plan": "Ginseng has been dug and sold to dealers in drug plant materials over a period of many years. The extremely high prices paid for the roots of ginseng in recent years have no doubt contributed to its depletion in some sections of the State. It is still locally abundant in many upland sections of the State but is difficult to find in many areas where it formerly grew."

In a letter to the U.S. Fish and Wildlife Service (see 51), Dr. Edwin B. Smith, University of Arkansas, commented: "*Panax quinquefolius L.* is rare in Arkansas, and * * * occurs in small populations. The populations are small enough (perhaps 5-20 plants) that it is certainly in danger of local extinction. On the other hand, the few times I have seen it have always been times when I was collecting in remote areas (difficult to get into); so it may be protected more or less by its remoteness from well-traveled areas." Dr. Smith provided a map indicating the occurrence of American ginseng in 12 Arkansas counties (see also 46), but advised that the plant may occur elsewhere.

In contrast, Dr. Gary E. Tucker, Arkansas Tech University, commented (see 52) that based on his field experience, American ginseng was locally common in many upland areas of the State and the plant's present distribution was not significantly different from its historic distribution. However, he added that the plant should be protected based on its status throughout its historical range and not on a State-by-State basis. He expressed concern that substantial collecting pressures may develop in Arkansas if wild American ginseng exports were banned for numerous other States while exports were allowed for roots collected in Arkansas.

Botanists that commented on the status of wild American ginseng in Arkansas vary widely in their opinions. Some sections of Arkansas may be capable of supporting a sustained harvest of American ginseng. However, Arkansas has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	State Population How Determined	Findings	Comments
Arkansas	U	--	--	Depleted but locally abundant 3/	--	NEA	The State anticipates reviewing the status of the species.
				Increased abundance and and distribution 4/	SC (9 responses)		

September 1, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	State Population How Determined	Findings	Comments
Arkansas	C	--	--	Depleted but locally abundant 3/	--	A	The State has initiated a program to better establish the species' status and to monitor the harvest pending express legislative authority in 1979.
				Increased abundance and distribution 4/	SC (9 responses)		

June 1, 1979

State	Classification	Harvest Reported 1978 (lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population estimates of abundance or status	How determined	Findings	Comments
Arkansas	M				700 Depleted but locally abundant 3/		NEA	Additional information being sought

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Arkansas	M			700	Depleted but locally abundant.[3] Increased abundance and distribution.[4]	SC	A	The Arkansas Forestry Commission has initiated a program to better establish the species' status and to monitor and to manage its harvest.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance[5]	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Arkansas (A)	Currently reported in four regions of the State.	HR, SD, FO	Ginseng season 8/15-12/1; Older plants are selected for harvesting. Report an increase in ginseng abundance in 1979 over previous years. Harvesters must replant seeds.	Forestry Commission Mgmt. Division has the authority. Research has been initiated to regulate harvest practices.	A

State Connecticut

Date: August 30, 1977

American Ginseng

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Connecticut.

American ginseng is included as a State Endangered species in "Rare and Endangered Species of Connecticut and Their Habitats" (see (56): "Formerly common in rich woods and on rocky hillsides, this species is now local and rare throughout most of its range. Extermination by commercial root hunters has been held principally responsible for its present rarity in the East. Recent reports show it to be very rare and local in Connecticut." Theodore Bampton, Connecticut Department of Environmental Protection, stated orally that he was not aware of any commercial collecting activities in the State.

In addition, Connecticut has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest		State Population		Findings	Comments
		Reported Harvest/ 1977	How Reported	Estimates of Abundance or Status	How Determined		
Connecticut	U	--	--	Rare and local[5/]	HR & FO	NEA	Consideration should be given to monitoring native populations.[5/]
				Endangered[6/]	HR & FO		

June 1, 1979

State	Classification	Harvest		Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
		Reported 1978 lbs.)	How reported					
Connecticut	N				Rare and local[5]	HR and FO	NEA	State comments for 1979 not yet received.
					Endangered[6]	HR and FO		

August 15, 1979

State	Classification	Harvest		Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
		Reported 1978 lbs.	How Reported					
Connecticut	N				Rare and local.[5]	HR and FO	NF	State comments for 1979 not received.
					Endangered [6]	HR and FO		

State Connecticut, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Connecticut (NF)					NEA

State Delaware

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Delaware.

In 1941, Tatnall (see 58) noted that American ginseng was infrequent in the woodlands of two valleys in one county in Delaware. Dr. C. W. Dunham, University of Delaware stated orally that American ginseng has always been rare in Delaware and that he was not aware of any commercial collecting in the State.

In addition, Delaware has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest		State Population		Findings	Comments
		Reported Harvest/ 1977	How Reported	Estimates of Abundance or Status	How Determined		
Delaware	U	--	--	Rare 7/	--	NEA	Has always been rare.7/ The State supports export restrictions. 8/

June 1, 1979

State	Classification	Harvest		Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
		Reported 1978 (lbs.)	How reported					
Delaware	N				Rare 7		NEA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest		Reported 9/1/78 to 8/2/79 (lbs)	estimates of abundance or status	How Determined	Findings	Comments
		Reported 1978 lbs.	How Reported					
Delaware	N				Probably less frequent than in the past.7		NF	Species should be carefully monitored.8

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Delaware (NF)	Reported as "very rare" by Plant Science Dept.	none	none		NEA

State Georgia

Date: August 30, 1977

American Ginseng

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of ginseng collected in Georgia.

Delcourt and Delcourt (see 46) noted American ginseng herbarium records for seven counties and literature references to two additional counties. However, in a letter to the U.S. Fish and Wildlife Service (see 60), Jerry McCollum, Georgia Department of Natural Resources, noted that the plant occurred in 26 counties. McCollum also noted that he did not consider the plant to be endangered currently, but that he thought commercial collection should be regulated to prevent the plant's status from deteriorating.

American ginseng has been included in several lists of rare and endangered Georgia plants: "Rare and Endangered Vascular Plants of Georgia," Wilbur H. Duncan (see 61); "Rare and Endangered Plant Species of Georgia," Georgia Botanical Society (see 62); and "Endangered Species of Georgia" (listed as Endangered), McCollum (see 63).

The MA has forwarded to the ESSA one permit application for international export of wild American ginseng collected in Georgia.

Mellinger (see 64) referred to the extirpation of American ginseng in one location in Georgia. The State was mentioned as a major commercial source of the roots in Wigginton (see 40).

The Georgia Wildflower Preservation Act of 1973 (see Ga. laws 1973, p. 373 et seq.) provides substantially for the conservation of plants listed as Endangered or Threatened by the Georgia Department of Natural Resources or the U.S. Department of the Interior. American ginseng is not listed under the Georgia Act; however, Jerry McCollum has stated orally that his Department was formally petitioned to list the species.

American ginseng has been considered a rare and endangered species by several professional and amateur botanists familiar with the Georgia flora. However, some sections of Georgia may be capable of supporting a sustained harvest of the plant. The Georgia Act generally prohibits taking, transport, or commerce in listed species except by permits issued by the Georgia Department of Natural Resources. Currently, American ginseng is not protected by the Georgia Act, and there is insufficient evidence to support a positive finding by the ESSA for export of wild American ginseng collected from the State. In the event American ginseng is listed under the Georgia Act, or protected by other mechanisms that would provide for its conservation and regulate its harvest in the State the ESSA may modify its finding for the 1977–78 season or subsequent seasons.

Finding. Negative.

July 7, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
Georgia	U	--	--	Endangered 9/	LS & B	NEA	Not included in State endangered species list.

September 1, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
Georgia	C	--	--	Endangered 9/	LS & B	A	Not included in the State endangered species list. The State has initiated a program to better establish the species' status and to monitor its harvest pending express regulatory authority.

June 1, 1979

State	Classification	Harvest Reported 1978 (lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Georgia	M			131	Endangered 9/	LS and B	NEA	Additional information being sought from State.

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Georgia	M	1,847	VOS	131	Endangered.[9] Not Endangered or Threatened.[10]	LS and B	A	The Georgia Department of Natural Resources has established a program to better establish the species' status and to monitor and manage its harvest.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Georgia (A)	Currently found in 50% of the State. Rare but not endangered; populations reported as stable.	SD, HR	Ginseng harvest season is 8/1-12/31. Harvester must replant seeds after harvest. Reported increase in harvest.	Georgia State Fish & Game Comm. requires replanting of seeds. Future research during FY81. Ginseng Protection Act of 1979 establishes harvest season, size and seed planting requirements. Dealer registration.	A

State Illinois

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Illinois.

American ginseng was considered "infrequent" in Illinois in 1876 by Patterson (see 66). Jones and Fuller (see 67) noted that American ginseng had been collected in 29 counties. Dr. Charles Sheviak, Endangered Plant Project/Natural Land Institutes supplied herbarium records (see 68) of the plant from 57 counties. In 1959, Mohlenbrock and Voigt (see 69) noted that in southern Illinois American ginseng "is rare in moist woods. It has become uncommon because of mass collections of its roots during past years."

The Illinois Nature Preserves Commission has included American ginseng as a threatened species in an interim list of plant species, "Endangered, Vulnerable, Rare, and Extirpated Vascular Plants in Illinois" (see 61). Dr. Charles Sheviak has stated orally that the plant is rare throughout the State and could be easily extirpated except in southern Illinois. He added, however, that plant had been considered too common for inclusion in the list of endangered plants being developed by the Endangered Plant Project.

The MA has forwarded to the ESSA three permit applications for international export of wild American ginseng collected in Illinois. The State was also mentioned as a commercial source in Wigginton (see 43).

Some sections of southern Illinois may be capable of supporting a sustained harvest of American ginseng. However, the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Illinois	U	--	--	Rare 10/	--	NEA	No anticipated management program.
				Decreasing 11/	SC & SD		
				Threatened 12/	LS, HR & B		
				Stable, or Increasing, or Decreasing	CC		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Illinois	C	--	--	Rare 10/	--	A	The State has initiated a program to better establish the species' status and to monitor its harvest pending express legislative authority in 1979.
				Decreasing 11/	SC & SD		
				Threatened 12/	LS, HR & B		
				Stable, or Increasing, or Decreasing	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Illinois	C			2,894	Rare 10/		NEA	State comments for 1979 not yet received.
					Decreasing 11/	SC and SD		
					Threatened 12/	LS, HR and B		
					Stable, or increasing, or decreasing	CC		

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Reported 9/1/78 to 8/2/79 (lbs)	estimates of abundance or status	How Determined	Findings	Comments
Illinois	C			3,137	Rare[11] Decreasing[12] Threatened[13] Stable, or increasing or decreasing.	SC and SD LS,HR, and B CC	A	The State has initiated a program to monitor the harvest through voluntary dealer reports, to educate collectors on proper harvest techniques, and to better establish the distribution of ginseng in Illinois.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Illinois (A)	84 of 102 counties report ginseng. Loss of habitat, due to agricultural expansion and urban development is reported to be low.	CC, SD	No regulated harvest season. Reported harvest occurs in the fall. Harvesters urged to replant seeds. Harvest season may be proposed in 1981.	Dept. of Conservation protects ginseng on recreational lands, approx. 300,000 acres. No current State management. Private harvesters often replant seeds.	A

State Indiana

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Indiana.

Coulter in 1900 (see 71) noted: "Found (American ginseng) only in the southern half of the State and rapidly disappearing because of its commercial value." "It is still abundant in Brown County upon the authority of W. S. Blutchley and is reported as not rare in Fayette County by Dr. Hessler. Its quantity, however, has been so greatly reduced that the 'sang' gatherers have disappeared." Coulter mentioned seven counties where the plant had been found. Forty-six years later Deam (see 72) noted: "Formerly frequent to common in rich woods throughout the State. From the earliest times it was dug for its large roots which were shipped mostly to China for use as a medicine. The earliest pioneers received twenty-five cents a pound for the dried roots. The fact that the price has steadily advanced, until it now sells for about $15.00 a pound, has resulted nearly in its extinction."

In correspondence to the U.S. Fish and Wildlife Service (see 73), Robert D. Feldt, Indiana Department of Natural Resources, supplied several documents and correspondence concerning the flora of Indiana. Maryanne Newsom, McCormick Creek State Park (see 74) noted: "In the three years I have been at McCormick's Creek, I have seen ginseng go from being fairly easy to find to being practically non-existent. With this rapid decline in the park itself, I can well imagine what is happening to the plant in other unprotected areas. Without some form of control over the indiscriminate * * * harvesting of this plant, ginseng will very soon join the list of Endangered plants, possibly within the next five years if something is not done."

Lois M. Gray, Spring Mill Park (see 75) regarded American ginseng as abundant; however, she expressed the same concerns as Ms. Newsom.

In addition, Mr. Feldt supplied a preliminary State list entitled "Rare and Endangered Plants in Indiana," that was compiled by William B. Barnes, Director, Division of Nature Preserves. This list was limited to those plants that were recorded to occur in six or fewer counties. American ginseng was not included.

In a letter to the U.S.D.A. Foreign Agricultural Service, Andy Irbe, Danville, Indiana, commented that American ginseng does not emerge every year and the plant was producing harvestable amounts in sections of Indiana where he collected it (see 76).

Mr. Edward Hanson, Indiana Department of Natural Resources, stated orally that American ginseng under collecting pressure in certain local areas of Indiana and that the collection appeared to occur year-round.

The MA has forwarded to the ESSA three permit applications for international export of wild American ginseng collected in Illinois.

American ginseng has declined in Illinois and this decline has been attributed to collecting pressure. Some sections of Indiana may be capable of supporting a sustained harvest of American ginseng. However the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Indiana	U	--	--	Decreasing 13/	FO	NEA	Not included in preliminary State list of endangered plants. 13/ State supports export restrictions. 14/
				Not Rare 14/	--		
				Stable or Decreasing	CC		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Indiana	C	--	--	Decreasing 13/	FO	A	Not included in preliminary State list of endangered plants. 13/ The State has initiated a program to better establish the species' status, and to monitor the harvest pending express legislative authority in 1978-1979.
				Not Rare 14/	--		
				Stable or Decreasing			

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Indiana	N			6,875	Decreasing 13/	FO	NEA	State comments for 1979 not yet received
					Not Rare 14/			
					Stable or decreasing	CC		

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Indiana	C			6,699	Decreasing[14] Not rare[15]	FO	NEA	The Indiana Department of Natural Resources has initiated a program to monitor the harvest through voluntary dealer reports, and to better establish the status of the plant in Indiana through surveys of lands administered by the Department. The Department does not have authority to control exploitation or to take additional steps to investigate status of the state's wild populations.
					Stable or decreasing.	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Indiana (NEA)	Rare plant field survey, 1980, will provide data on distribution, abundance, and status. Known from at least 56 counties. Abundance and distribution have been assessed on some State lands.	HR, LS, Property surveys, proposed research will include HR, LS, CC, B	No legal season in 1979. Proposed season extends from 8/15-3/31. In past years diggers were not taking ginseng out of season, because dealers would not buy it. Diggers encouraged to plant seeds at harvest site.	Under 1980 law (House Act 1078). Dept. of Natural Resources has authority to manage ginseng. Brochures and pamphlets are released to educate the public. Dealers are encouraging conservation. Dealers must provide an annual summary report.	A

State Iowa

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Iowa.

In 1899, Fitzpatrick (see 77) noted that American ginseng was "• • • becoming infrequent" (he listed nine counties where the plant occurred). Dean Roosa, Iowa Conservation Commission, stated orally that he considered the plant threatened. He further noted that he had observed it in central Iowa and that it was probably more prevalent in the more densely wooded northeastern Iowa.

The MA has forwarded to the ESSA two permit applications for international export of wild American ginseng collected in Iowa.

Some sections of Iowa may be capable of supporting a sustained harvest of American ginseng. However, the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Iowa	U	--	--	Stable, or Increasing, or Decreasing	CC	NEA	No anticipated management program.

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Iowa	C	--	--	Stable, or Increasing, or Decreasing	CC	A	The State has initiated a program to better establish the species' status and to monitor its harvest pending express legislative authority in 1979.

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Iowa	N	7[16]	VDS	1,492	Stable, or increasing, or decreasing	CC	NEA	State comments for 1979 not yet received

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Iowa	C	7[16]	VDS	1,492	Stable, or increasing or decreasing.	CC	A	The Iowa Conservation Commission has established a program to monitor the harvest thorgh voluntary dealer reports, to promote proper harvest techniques and to better establish the species' status in the wild.

State Iowa, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Iowa (A)	Northeastern populations are stable; central populations appear to be increasing. Suitable ginseng habitat abundant, particularly in eastern third of State. Loss of habitat is about 1% a year.	FO	No regulated harvest season. Encouraged to dig in the fall and replant seeds. Harvest pressure is stable, 10% less roots dug than in 1978.	State Conservation Commission regulates ginseng harvest. It is illegal to dig on State property.	A

State Kentucky

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Kentucky. Braun (see 79) in 1943 recorded American ginseng in eleven counties in Kentucky. Twenty-eight years later Wharton and Barbour (see 80) noted: "The dried roots, long in demand in Chinese folk medicine and bringing a high price, have been sought, dug, and sold for export. As a result, this native species, once common in most of rich forest of the state, has been exterminated in many places and is now rare throughout Kentucky, as well as in other States. The species should be protected by law from further exploitation, and any plants to be sold should be propagated and grown commercially."

In a letter to the Smithsonian Institution (see 41), Dr. Arnold Krochmal, U.S.D.A. Forest Service supplied the following comments: "I have lived in the Appalachian region over a period of 40 years now, 17 as a student and botanist. Ginseng has always been hard to find, contributing to its high cost. The collection of gingseng has been much reduced in the past twenty years by the outmigration of Appalachian population to urban areas." He also noted that he had "seen increases in ginseng populations in Kenutcky, and * * * (could not) * * * consider it in any way endangered."

American ginseng is included as a threatened species in "A List of Rare, Threatened, or Endangered Flora in Kentucky" (see 61). The plant was not included in the "Endangered Plants and Animals of Kentucky" (see 81).

The MA has forwarded to the ESSA six permit applications for international export of wild American ginseng collected in Kentucky. Wigginton (see 40) also mentioned Kentucky as a commercial source.

The ESSA has received conflicting information on the status of American ginseng in Kentucky. The more recent comments by Krochmal indicate there may be some sections of Kentucky capable of supporting a sustained harvest of the plant. However, the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Kentucky	C	52,700 lbs.[15/]	DS	Increasing; not Endangered[16/]	--	A	American ginseng is not included in the "Endangered Plants and Animals of Kentucky."[20/]
				Threatened[17/]	--		
				Frequent to Abundant, but Decreasing[18/]	--		The State has initiated a program to better establish the species' status, and to monitor the harvest pending express legislative authority in 1980.[15/]
				Endangered[19/]	--		
				Stable, or Increasing, or Decreasing	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Kentucky	C	22,075	VOS	14,103	Increasing; not endangered [16]			Kentucky has initiated field surveys to better establish the species' status and has implemented a voluntary program to monitor and manage the harvest pending express legislative authority in 1980.
					Threatened [17]			
					Frequent to abundant, but decreasing [18]			
					Endangered [19]			
					Stable, or increasing, or decreasing	CC		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Kentucky	C	22,240	VOS	15,977	Increasing; not endangered[17]		A	Kentucky has initiated field surveys to better establish the species' status and has implemented a voluntary program to monitor and manage the harvest pending express legislative authority in 1980.
					Threatened[18]			
					Frequent to abundant, but decreasing[19]			
					Endangered[20]			
					Stable, or increasing, or decreasing	CC		

State Kentucky, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Kentucky (A)	Monitoring of study plots indicates an overall increase in abundance at those sites. 98 counties of 120 report ginseng harvest in 1979-80 harvest season.	SC	Harvest occurs from May to Nov., although most avoid harvesting until berries are mature. There is increasing utilization and destruction of ginseng habitat and increased harvest pressure.	No State agency at this time has authority over ginseng regulations. Steps are being taken to educate the public toward ginseng conservation.	A

State Louisiana

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. Data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Louisiana.

In a letter to the U.S. Fish and Wildlife Service, Dr. Mary G. Curry, VTN Louisiana Inc. (see 84) commented that American ginseng is known definitely from only one parish in Louisiana, where it is considered rare (see also 46 and 85). She further noted: "The species should be considered threatened, if not endangered in Louisiana" (see also 85).

In addition, Louisiana has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	How Determined	Findings	Comments
Louisiana	U	--	--	Rare and Local and Threatened to Endangered 21/	HR	NEA	Louisiana is on the periphery of American ginseng's distribution.

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs)	State population—estimates of abundance or status	How determined	Findings	Comments
Louisiana	N				Rare and local, and threatened to endangered 21	HR	NLA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Reported 9/1/78 to 8/2/79 (lbs)	estimates of abundance or status	How Determined	Findings	Comments
Louisiana	N				Rare and local and threatened to endangered 21	HR	NF	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Louisiana (NF)	No estimates on the size of existing range. Habitat is limited. Ginseng is extremely scarce.	FO	No commercial collecting; less than 12 amateur harvesters. State encourages fall harvest and replanting of seeds.	Office of Forestry is responsible for management for ginseng as of now.	NEA

State Maine

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Maine.

In 1978, Eastman (see 90), in a report on American ginseng prepared for Maine's Critical Areas Program, noted that American ginseng was collected in Maine in the 1920's and that most of the plants in the State have been destroyed because of logging operations and ginseng collectors. In reviewing the status of the plant, Eastman found that: "A thorough review of the literature, consultations with professional and amateur botanists, and field checking indicated references to 14 stations in Maine" (eight counties; see also 91). Several professional botanists contacted by Eastman were not aware of any American ginseng in the areas of the State with which they were familiar. Eastman found only four stations which still had plants, none of which occupied more than 100 square meters.

Kartesz (see 61) noted that American ginseng was included as a rare species in "Types of Critical Areas in Maine Phase I Report." This report was prepared by Garret C. Clough and Paul R. Adamus in 1976.

Two of the four known stands of American ginseng have been registered as "Critical Areas" by the State and a third is also being considered for such designation. "Critical Areas," as designated by Maine's State Planning Office, are natural areas of Statewide importance because of their unusual natural, scenic, scientific or historical significance. Except for the registration process, the program is essentially nonregulatory.

Based on a review conducted under the direction of the Maine State Planning Office, only four stations of wild American ginseng are known in Maine. The State has recognized these stations as valuable State resources. Thus it is clear that exports of wild American ginseng collected in Maine should not be approved by the ESSA for the 1977–78 collecting season.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Maine	C	--	--	Depleted - 14 stations have been Documented 22/	HR & FO	NEA	Two of the four known extant stands have been designated "Critical Areas" by the State. The designation does not provide any protection.

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Maine	C				Depleted—14 stations have been documented 22/	HR and FO	NEA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Maine	C				Depleted-14 stations have been documented. 22/	HR and FO	NF	State comments for 1979 not received.

State Maine, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Maine (NF)					NEA

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State Maryland

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Maryland.

Shreve (see 92) in 1910 noted that American ginseng occurred throughout the mountain and midland zones, but was absent from the coastal zone. He further noted the plant was abundant in some areas, but was rare to infrequent in others, particularly in the midland zone. Bernard F. Halla, Maryland Wildlife Administration, stated orally that American ginseng was found in the three western counties of Maryland and that it was not abundant.

The MA has forwarded to the ESSA one permit application for international export of wild American ginseng collected in Maryland.

In addition, Maryland has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Maryland	U	--	--	Decreasing[23/]	Collectors' Reports	NEA	Maryland anticipates developing a program to monitor and manage the harvest. Not included in State endangered species list.
				Locally Common[24/]	--		
				Stable	CC		

August 16, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Maryland	R	--	--	Decreasing[23/]	Collector's Reports	A	The State has initiated a program to better establish the species' status and to monitor and manage its harvest. Not included in State endangered species list.
				Locally Common[24/]	--		
				Stable	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Maryland	M			8	Decreasing[23]	Collector reports	NEA	State comments for 1979 not yet received.
					Locally Common[24]			
					Stable	CC		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Maryland	M	57	SED	8	Decreasing[23] Locally Common[24] Stable	Collector rpts. CC	A	The Maryland Department of Agriculture has established a program to monitor and manage the harvest, and to better establish the species' status in the wild.

State Maryland, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Maryland (A)	Ginseng was harvested in 7 counties in 1979. Occurs primarily in the western counties of the State, where it is locally common. 1980 surveys will assess current abundance.	FO, SD	Garrett country reports the highest number of successful diggers. Based on a 2 year study, State reports the 1978-79 season had no adverse effects on the existing populations.	Dept. of Agriculture regulates and monitors the harvest. Mandatory regulations for diggers and dealers. Public information efforts will continue to encourage conservation of ginseng.	A

State Massachusetts

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Massachusetts.

Dr. Norton Nickerson, Tufts University, stated orally that American ginseng was harvested in Massachusetts by the bushel in the early 20th century, but it is very scarce now (for references concerning the occurrence of the plant in Massachusetts before 1915, see 93, 94, 95, and 96).

American ginseng is included as a rare species in the "List of Plant Species Which are Rare, Endangered, or Have Undetermined Status in Massachusetts" prepared by Robert W. Franzen and Henry J. Ritzer, USDA, Soil Conservation Service (see 61). The authors considered a species rare if because of its small numbers, it may become threatened with extinction due to further deterioration of the environment or other factors.

In addition, Massachusetts has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
Massachusetts	U	--	--	Rare[17/]	--	NEA	Considered a minor ginseng producing State.
				Endangered or Threatened[25/]	--		
				"Exceedingly Rare and Local"[26/]	HR		

June 1, 1979

State	Classification	Harvest Reported 1978 (lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Massachusetts	N				Rare "		NEA	State comments for 1979 not yet received.
					Endangered or threatened "			
					"Exceedingly rare and Local" "	HR		

August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Massachusetts	N				Rare[19]		NF	No information available on annual harvest or on the status of wild populations.
					Endangered or threatened[25]			
					"Exceedingly rare and local"[26]	HR		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Massachusetts (NF)					NEA

State Michigan ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. In 1881, Wheeler and Smith (see 98) noted that American ginseng grew throughout Michigan: "Usually rare, but so common in places that it has been dug for profit, and nearly exterminated." They further noted the plant occurred in great abundance in one county, but eleven years later (see 99) the observation was modified, "formerly in great abundance." In 1961, Smith (see 100) noted that the plant was once very common in Michigan, but that by 1961 itwas quite rare due to overcollecting.

The MA has forwarded to the ESSA one permit application for international export of wild American ginseng collected from Michigan.

Wagner et al. (see 101) reported that American ginseng is an official Threatened species in the State of Michigan. The Michigan Endangered Species Act of 1974 (Act Number 203) considers a threatened species as one "which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." American ginseng was originally considered for endangered status; however, information acquired by the Department indicated that threatened status might be more appropriate. The Michigan Endangered Species Act of 1974 contains several provisions for the conservation of animals and plants either listed by the Department of the Interior or by the Director of the Michigan Department of Natural Resources. Section 6(1) of the Michigan Act states: "Except as otherwise provided in this Act a person shall not take, possess, transport, import, export, process, sell, or offer for sale, buy or offer to buy, nor shall a common carrier transport or receive for shipment, any species of fish, plants, or wildlife appearing in the following lists * * *"

The Michigan Department of Natural Resources is issuing collecting permits for American ginseng provided the permit holders supply the Department with data concerning the amount of plants collected, distribution and population sizes of the plants, and the name and address of the purchaser(s) and date(s) of sale(s), with the understanding that the data would not be made public. The Department intends to use the data to more accurately assess the status of the species in Michigan and to establish the appropriate collecting controls.

Because Michigan has initiated a program designed to conserve American ginseng and to regulate the harvest in order to prevent overexploitation, the ESSA is anxious to give the State's program a fair chance to become functional. However, care must be taken to ensure that the approval of exports from this one State does not result in overcollection.

Thus, Michigan roots may only be exported if copies of the relevant Michigan permit(s) are attached to the copy of the U.S. Fish and Wildlife Service permit that must accompany each shipment. Also, as an attachment to the U.S. Fish and Wildlife Service permit, the exporter must state the number of pounds of roots included that were collected under each Michigan permit. As it becomes available, the U.S. Fish and Wildlife Service periodically will supply this information to the Michigan Department of Natural Resources.

The ESSA is working with the Michigan Department of Natural Resources to establish an appropriate quota for exports of roots collected in the 1977–78 season. Because roots are already being collected in the State and the status of the plant has not been adequately ascertained by State officials and the ESSA, the quota for this collecting season will be conservative.

When the ESSA determines the quota has been met, exports of roots collected in Michigan after the date of this notice will be closed. Because the demand for wild American ginseng is high, the quota may be filled before revised ESSA export findings are published in the Fall.

Export quotas for future collecting seasons will be determined based on current biological and commerical data including data generated by the Michigan permit system. In addition, the ESSA will require that future international exports be collected in an appropriate collection season to ensure mature plants have had adequate opportunity to reproduce.

Finding. Positive.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Michigan	R	--	--	Threatened	B	A	American ginseng has been designated a Threatened species under the Michigan Endangered Species Act. The State has a program to better establish the species' status, and to monitor and manage its harvest.

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Michigan	M				To Threatened	HR, FO and S	NEA	Additional information being sought from the State

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Reported 9/1/78 to 8/2/79 (lbs)	estimates of abundance or status	How Determined	Findings	Comments
Michigan	M			10	Threatened[27]	HR,FO, and B	NF	The Michigan Department of Natural Resources has established a program to monitor and manage the harvest,and to better establish the species' status in the wild; however, the monitoring system depends on mandatory collector reports which have not been forthcoming.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Michigan (NF)	Occurs in southern counties. Population trends unclear. Loss of habitat due to land development.	FO, B, DR	Harvest season 8/15 -12/1. Many plants believed to go out of State unrecorded. 50 pound estimated harvest for 1979.	Michigan Endangered Species Act, 1974, protects the plant. Dept. of Natural Resources has established program to manage harvest, including mandatory collection permits.	NEA

State Minnesota ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Minnesota.

In 1884 Upham (see 103) noted that American ginseng occurred "throughout the State, exception northwestward; local, wanting in some districts, rare northward; frequent, occasionally abundant, in the region of the upper Mississippi, and in * * * (he listed five counties)." In 1892, MacMillan (see 104) found the plant "* * * not very abundant in the Minnesota Valley." By 1969, Morley (see 105) noted that American ginseng was "now exterminated or nearly so by herb hunters * * *" in Minnesota. Monserud and Ownbey (see 106) concurred, "Now extremely rare."

American ginseng was included in the "Rare and Engandered Plants of Minnesota" prepared by Dr. Thomas Morley, University of Minnesota, in 1972 (see 61).

The Minnesota Department of Natural Resources (see 102) listed the American ginseng as a "Species of Special Interest," that is not presently endangered or threatened but is apt to become so in the near future:

* * * (Ginseng) was once common in mature forests. It has long been collected, and is largely extirpated by people who dig for its * * * roots * * *. Clearing of forests has also been a factor * * *. Preservation of undisturbed areas of hardwood forest, and possibly some planting, should help retain it as a wild plant * * *. Ginseng should be placed on the protected wild flower list so that collection of the roots from public lands can be regulated.

In a letter to the U.S. Fish and Wildlife Service, Carrol L. Henderson (see 107), Minnesota Department of Natural Resources, commented that Dr. Morley and Dr. John Moyle both favored restrictions on international trade to protect American ginseng from overcollecting. Mr. Henderson further noted that based on the opinions of these botanists, and on other available data, his Department endorses prohibition of exports of wild American ginseng collected in Minnesota.

Both Upham (see 103) and Nash (see 25 referred to Minnesota as a large producer of American ginseng. Upham quoted the price at about one dollar per pound. The MA has forwarded to the ESSA two permit applications for export of wild American ginseng collected in Minnesota.

Besides the lack of data that would support a positive finding by the ESSA for international export of wild American ginseng collected in Minnesota, the State endorses a prohibition on export.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Minnesota	U	--	--	Rare and Endangered 17/	--	NEA	Plant should be protected. 27/ Harvest should not be allowed in the State. 28/ Some collectors support export restrictions.
				"Species of Special Interest" 27/	--		
				Stable	CC		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Minnesota	C	--	--	Rare and Endangered 17/			The State has initiated a program to better establish the species' status and to monitor its harvest pending additional leyislative authority in 1979.
				"Species of Special Interest" 27/			
				Stable	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Minnesota	C	443	VDR	633	Rare and endangered 17/		NEA	State comments for 1979 not yet received.
					"Species of Special Interest" 27/			
					Stable	CC		

State Minnesota, page 2 ICAC Summary, GINSENG

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Minnesota	M	443[16]	VDR	633	Rare and endangered[18] "Species of Special Interest"[28] Stable	CC	A	The Minnesota Department of Natural Resources has established a program to monitor and manage the harvest, and to better establish the species' status in the wild.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Minnesota (A)	Current status and distribution considered stable. Additional research underway.	DP, SD	Harvest season 8/15-12/31. Only mature plants may be harvested. Seeds must be planted at harvest site.	Dept. of Natural Resources involved in ginseng protection. State law and Commissioner's order No. 2030 serve to regulate ginseng harvest and management.	A

State Mississippi ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Mississippi.

In 1971, Lowe (see 108) noted that American ginseng occurred in five counties in Mississippi. Delcourt and Delcourt (see 46) reported herbarium records for eight counties, and found literature references to four additional counties.

The plant is included in a preliminary checklist of "Rare and Endangered Species in Mississippi," compiled by Dr. Thomas M. Pullen, University of Mississippi (see 109).

In addition, Mississippi has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest		State Population		Findings	Comments
		Reported Harvest/ 1977	How Reported	Estimates of Abundance or Status	How Determined		
Mississippi	U	--	--	Rare and Endangered[29/]	B	NEA	Considered a minor ginseng producing State.

June 1, 1979

State	Classification	Harvest		Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
		Reported 1978 lbs.)	How reported					
Mississippi	N				Rare and endangered[29]	B	NEA	State comments for 1979 not yet received

August 15, 1979

State	Classification	Harvest		Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
		Reported 1978 lbs.	How Reported					
Mississippi	N				Rare and endangered[29]	B	NF	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Mississippi (NF)					NEA

State Missouri ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. In 1886, Tracy (see 111) regarded American ginseng as "common in rich woodland. • • •" 77 year later, Steyermark (see 112) noted that the plant was: "Frequent throughout the Ozark section and in extreme eastern Missouri, rare elsewhere in the State. • • •" He further added: "The demand for this plant • • • has threatened it with extinction in many parts of Missouri. • • • Usually at any given locality in Missouri, the plants are few to several in number, and occur as scattered individuals, well separated from one another."

American ginseng is not included in the *Rare and Endangered Species of Missouri* (see 113). In a letter to the U.S. Fish and Wildlife Service, John E. Wylie (see 114), Missouri Department of Natural Resources, commented that American ginseng had reportedly become "noticeably scarcer in the last year • • •" He further noted that the decline in status may be attributed to recent drought and collecting for the foreign and domestic markets. Wylie concluded by stating that his Department would recommend a ban on American ginseng exports for at least three years. In a letter to the ESSA, Allen Brohn (see 115), Missouri Department of Natural Resources, commented that American ginseng is not considered endangered in the State, but that "• • • it is subject to substantial exploitation and numbers may be dwindling." He concurred with John E. Wylie that there should be a prohibition against the exportation of the plant.

The MA has forwarded to the ESSA four permit applications for international export of wild American ginseng collected in Missouri. Wigginton (see 40) also mentions Missouri as a commercial source.

Besides the lack of data that would support a positive finding of the ESSA for international export of wild American ginseng collected in Missouri, the State endorses a prohibition on exoprt.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Missouri	C	6100 lbs[30]	DS (2 major dealers)	1,000,000 plants[31]	Based on 1/acre in available habitat.	A	Not included in "Rare and Endangered Species of Missouri."[32] The State has initiated a program to better estaulish the species' status, to monitor the harvest, and to promote better management.
				Stable	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Missouri	C			5,347	Not included in "Rare and Endangered Species of Missouri"[32].		NEA	State comments for 1979 not yet received.
					Stable	CC		

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State Missouri, page 2 ICAC Summary, GINSENG

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Missouri	C	3,482	VDS	5,875	Not included in "Rare and Endangered Species of Missouri"30		A	The Missouri Department of Conservation has initiated a program to monitor the harvest through voluntary dealer reports, and to control exploitation through voluntary collecting and buying seasons. In addition, the State has developed a brochure to inform collectors of proper harvest techniques, and is conducting research to better establish the species' status in the wild.
					Stable	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Missouri (A)	Over 90% of harvested ginseng comes from the Ozarks and Ozark border regions. Current research on abundance and distribution from dealer reports. "Not endangered" in State, though extirpated from many areas.	SD, HR	Harvest season 8/15 to 11/1: Harvest levels have increased over previous years.	No direct management authority for ginseng. State maintains records from dealer reports. Voluntary program.	A

State Nebraska

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Nebraska.

Pound and Clements in 1900 (see 118) and Winter in 1936 (see 119) have stated that American ginseng is rare in Nebraska. In a letter to the U.S. Fish and Wildlife Service, Mr. Curtis M. Twedt (see 120), Nebraska Parks Commission commented that American ginseng occurs in three eastern counties in Nebraska. Mr. Twedt also stated orally that he was not aware of commercial harvests of ginseng in the State and that the plant was being considered for listing under the Nebraska Nongame and Endangered Species Conservation Act.

There is no evidence that would support a finding by the ESSA approving exports of wild American ginseng collected in Nebraska.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Nebraska	U	--	--	Occurs in three eastern counties[33/]	HR	NEA	Not known whether American ginseng is commercially harvested in Nebraska.

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Nebraska	N				Occurs in three eastern counties[32].	HR	NEA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Nebraska	N				Occurs in three eastern counties.[31]	HR	NEA	State Comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Nebraska (NEA)	Occurs in 3 eastern counties, where it is uncommon to rare.	HR	No regulation of harvest season. No records of collecting pressure.	None	NEA

State New Hampshire

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in New Hampshire.

In 1924, Pease (see 121) noted two stations of American ginseng in Coos County, and regarded the plant as scarce and nearly exterminated in the State. Eight additional stations in New Hampshire are documented by herbarium specimens at the New England Botanical Club, Cambridge, Massachusetts and at the University of New Hampshire.

American ginseng was included as an endangered species in the list, "Endangered Plants of New Hampshire" developed by Albion Hodgon, University of New Hampshire (see 61).

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
New Hampshire	U	—	--	Rare and Endangered[34/]	LS, HR & FO	NEA	Considered a minor ginseng producing State.

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
New Hampshire	N				Rare and endangered[31]	LS, HR and FO	NEA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
New Hampshire	N				Rare and endangered. 32	LS,HR and FO	NF	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
New Hampshire (NF)	No program.		No commercial trade or harvest is known in the State.		NEA

State New Jersey

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in New Jersey.

In 1889, Britton (see 123) noted that American ginseng was very rare in New Jersey.

In 1973, Fairbrothers and Hough (see 124) listed American ginseng as a rare species in Rare or Endangered Vascular Plants of New Jersey. The authors noted that the plant occurred in three counties.

Santiago Porcella III, New Jersey Department of Environmental Protection, commented in a letter to the U.S. Fish and Wildlife Service (see 125) that American ginseng should be considered rare. He noted that the plant occurred in five counties.

Finding. Negative.

July 7, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
New Jersey	U	--	--	Rare[35/]	LS & B	NEA	Considered a minor ginseng producing State.

June 1, 1979

State	Classification	Harvest Reported 1978 (lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs)	State population—estimates of abundance or status	How determined	Findings	Comments
New Jersey	N				Rare[31]	LS and B	NEA	State comments for 1979 not yet received

August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
New Jersey	N				Rare[33]	LS and B	NF	Available information suggests that American ginseng is rare in New Jersey and is not harvested.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
New Jersey (NF)	Very rare, restricted to two areas of the State.			No program.	NEA

State New York

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in New York.

In 1924, House (see 127) noted that American ginseng was "frequent as local, at least formerly so, northward in the State. Less common or rare southward to Rockland County and westward to Lake Erie." Zander (see 128) documented the distribution of American ginseng in 12 western New York counties and noted that the plants were "found at scattered locations in rich woods."

Dr. Richard S. Mitchel, New York State Museum of Science, stated orally that American ginseng has been extirpated in many areas of New York and that it was currently restricted to relatively inaccessible areas. He further stated his understanding that the plants were collected only when mature, but he thought much of the collecting took place on public lands.

Effective September 1, 1974, New York law prohibited taking of American ginseng without the landowner's consent, and since May 25, 1976, a collecting permit has been required, issued by the New York Department of Environmental Conservation. Permits are granted for purposes of scientific research or salvage, but not for commercial harvest.

The MA has forwarded to the ESSA six permit applications for international export of wild American ginseng collected in New York.

The taking of American ginseng in New York State is generally prohibited by State law.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
New York	R	--	--	Decreasing and Protected 36/	FO	NEA	American ginseng is currently protected by the State, but they are developing a program to better establish the species' status, and to monitor and manage its harvest.
				Increasing, or Decreasing	CC & DC		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
New York	R	--	--	Decreasing and Protected 36/	FO	A	The State has initiated a program to better establish the species' status, and to monitor and manage its harvest pending additional legislative authority in 1979.
				Increasing or Decreasing	CC & DC		

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population--estimates of abundance or status	How determined	Findings	Comments
New York	M			507	Decreasing and protected[36]	FO	NEA	State comments for 1979 not yet received.
					Increasing, or decreasing	CC		

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
New York	M	366	VDR	510	Decreasing and protected[34] Increasing, or decreasing	FD CC	NF	The New York Department of Environmental Conservation has established a program to monitor the harvest through voluntary dealer reports, and to a limited extent, to control exploitation. However, dealer compliance has been lax.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
New York (NF)	Current research to assess and monitor abundance and distribution.	SA, SC	Harvest season, 8/15-11/30. Current research to assess harvest practices Replanting seeds encouraged at harvest site.	Dept. of Environmental Conservation No harvest allowed on State lands.	A

State North Carolina

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. Radford et al. (see 129) noted that American ginseng occurred in 14 counties in the mountains and piedmont of North Carolina; Delcourt and Delcourt (see 46) noted herbarium records for one county and literature references to 17 additional counties; and Hardin (see 130) noted the plant occurred in 9 counties (see also 131).

Radford et al. (see 129) regarded American ginseng as rare in North Carolina. This opinion was shared by Hardin (see 132) who noted that the plant's status was the result of overcollecting.

Hardin also (see 130) included American ginseng as a species threatened throughout its range and exploited in "Endangered and Threatened Plants and Animals of North Carolina". He further noted that collecting wild American ginseng "is a very old but recently growing business which could lead to the eradication of the species in native habitats • • •" In contrast, Arnold Krochmal, U.S.D.A. Forest Service commented in a letter to the Smithsonian Institution (see 41), that he has seen increases in ginseng populations in North Carolina (refer to summary for Kentucky).

The MA has forwarded to the ESSA eight permit applications for international export of wild American ginseng collected in North Carolina. Wigginton (see 40) also noted the State was a major commercial source.

Bogue (see 133) quoted one individu who said that American ginseng wa stolen from Great Smokey National Par where it was plentiful. Dr. Susan Brat ton, National Park Service, stated orall that poachers are a current problem i the Park and that the plant does not oc cur in much of the habitat that appears suitable.

North Carolina State law (Section 14–129) requires written permission fro landowners or an authorized agent befo American ginseng can be collected in certain counties.

Some sections of North Carolina ma be capable of supporting a sustained har vest of American ginseng. However, th State has neither management programs nor regulatory mechanisms to promot the conservation of American ginsen and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classi-fication	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Deter-mined	Findings	Comments
North Carolina	R	16,615 lbs. 37/	DS	Threatened 38/	B	A	The State has initiated a program to better establish the species' status and to monitor and manage its harvest.
				Stable 39/	--		
				Decreasing 40/	Survey of Foresters		
				Increasing 16/	--		
				Decreasing and Threatened 41/	--		
				Threatened 42/	--		
				Increasing, or Decreasing	CC		

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
North Carolina	M			7,117	Threatened[34]	B	NEA	State comments for 1979 not yet received.
					Stable[39]			
					Decreasing[16]	Survey of Foresters.		
					Increasing[16]			
					Decreasing and threatened[37]			
					Threatened[38]			
					Increasing, or decreasing	CC		

State North Carolina, page 2 ICAC Summary, GINSENG

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
North Carolina	M	3,120 2,800 (Dealer purchases through March 1979 are only slightly higher.)	MDR SED	7,965	Threatened[35] Stable[36] Decreasing[37] Increasing[37] Decreasing and threatened[38] Threatened[39] Increasing or decreasing	B Survey of Foresters CC	A	The North Carolina Department of Agriculture has established a program to monitor and manage the harvest, and to better establish the species' status in the wild.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
North Carolina (A)	Harvested in 34 counties, where reported as "common."		State law prohibits harvest from 4/1-9/1 unless on private owners' land. State reports an increase in harvest from previous year.	Dept. of Agriculture manages ginseng. Four State laws protect ginseng. Program includes publicity to encourage conservation by ginseng diggers.	A

State Ohio

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. **The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Ohio.**

Schaffner in 1914 (see 136) considered American ginseng generally distributed in Ohio (for references concerning the occurrence of the plant in Ohio in the 19th century, see 137 and 138). Eighteen years later Schaffner (see 139) noted: "General, but now scarce."

Richard S. Moseley, Ohio Division of Natural Areas and Preserves, stated orally that American ginseng occurred in 25 counties in Ohio and that he knows of several areas in the State where the plant has been eradicated in the last eight years. He further noted that the plants were primarily collected by emigrants from West Virginia. A similar opinion was stated orally by Bob McCance and Dennis Anderson, Ohio Natural Heritage Program. Moseley added that the plant had started to flower this year in the first week of July (substantial collecting was taking place in Ohio at that time).

Dr. Thomas Cooperrider, Kent State University, stated orally that American ginseng was potentially threatened in Ohio and that commercial collecting in the State should be stopped. Dr. Charles C. King, Ohio Biological Survey, stated orally that the plant was not common and that it was being collected in parks.

In a letter to the U.S. Fish and Wildlife Service (see 140), Dennis Anderson commented that one record from the major herbaria within Ohio was dated 1892 with a note "becoming rare." He further added: "The verbal responses of a few knowledgeable field people concerning the current status and trend of the species in Ohio yielded partially conflicting reports from 'definately declining' to 'remaining about constant'. No one reported population increases and most agreed that diggers had reduced populations in at least local areas."

Wistendahl et al. (see 141) included American ginseng as an endangered species in "Rare and Endangered Plant Species of the Central Ohio Valley; A Contribution Toward a Comprehensive List for Ohio," and noted that it occurred in three counties. The plant was also included in a "Preliminary List of Rare and Endangered Species in Ohio Dicotyledoneae," compiled by Dr. Thomas S. Cooperrider (see 142).

The MA has forwarded to the ESSA seven permit applications for international export of wild American ginseng collected in Ohio.

Ohio has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Ohio	U	--	--	Rare and Endangered[43]	LS	NEA	Anticipates establishing a management program.
				Locally Common, but Decreasing[44]	--		
				Stable to Decreasing[45]	B		
				Stable	CC		

June 1, 1979

State	Classification	Harvest: Reported (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Ohio	M				Rare and endangered[39]	LS	NEA	State comments for 1979 not yet received.
					Locally common but decreasing[40]			
					Stable to decreasing[41]	B		
					Stable	CC		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Ohio	M				Rare and endangered[40]	LS	A	The Ohio Department of Natural Resources has initiated a program to monitor and manage the harvest, and to better establish the species' status in the wild.
					Locally common but decreasing[41]			
					Stable to decreasing[42]	B		
					Stable	CC		

State Ohio, page 2

ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Ohio (A)	Occurs in 46 of 88 counties in the State. Reports indicate it is widely distributed over southern and eastern Ohio. No trend data available.	FI, IR, SI, TS	Harvest season of 8/15 - 12/31 recently imposed. Mature plants to to be harvested. Seeds to be planted at digging site. Collecting pressure has increased in 1979 and 1980.	Dept. of Natural Resources monitors the harvest, along with other State agencies. Ginseng management program covers strict regulation of harvest. Educational program to collectors.	A

State Oklahoma

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng taken in Oklahoma.

In a letter to the U.S. Fish and Wildlife Service (see 143), Dr. Jerry J. Crockett, Oklahoma State University, commented: "There is only one reported herbarium specimen of American ginseng in Oklahoma." Although believing the plant still occurs in the State, he considered it rare and in need of protection.

American ginseng is designated "Rare-1" in "Rare and Endangered Vertebrates and Plants of Oklahoma" (see 144). Rare-1 is defined as a species that "although not presently threatened with extinction, is in such small numbers that it may be endangered if its environment worsens."

Finding. Negative.

July 7, 1978

AMERICAN GINSENG

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Oklahoma	U	--	--	Extremely rare[45/]	HR	NEA	Oklahoma is on the periphery of American ginseng's distribution.
				Rare 1[47/]	--		

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Oklahoma	N				Extremely rare[43]	HR	NEA	State comments for 1979 not yet received.
					Rare[44]			

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Oklahoma	N				Extremely rare[43] Rare[44]	HR	NEA	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Oklahoma (NEA)				No program.	NEA

State Pennsylvania ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Pennsylvania.

In 1852, Noll (see 145) noted that American ginseng was not common in Pennsylvania. Other botanists have also concurred with Noll that the plant is rare or becoming so in the State (see 146, 147, 148, and 149).

Maurice K. Goddard, Pennsylvania Department of Environmental Resources, stated orally that American ginseng is common throughout Pennsylvania on specific sites; and that he did not consider collection pressure to be a significant problem at present. He further noted that most collectors are careful to conserve the plant. The MA has forwarded to the ESSA six permit applications for international export of wild American ginseng collected in Pennsylvania.

Some sections of Pennsylvania may be capable of suporting a sustained harvest of American ginseng. However, the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Pennsylvania	U	--	--	Stable[48/]	--	NEA	Pennsylvania anticipates establishing a management program pending express legislative authority.
		—		Rare in Western Pennsylvania[49/]	--		
				Rare in Perry County, Pennsylvania[50/]	FO		
				Rare in Southeastern Pennsylvania[51/]	--		
				Not Endangered or Threatened[52/]	Because of harvest technique		
				Decreasing[53/]	--		
				Decreasing in Northampton County, Pennsylvania[54/]	--		
				Stable or Increasing	CC		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Pennsylvania	U	--	--	Stable 48/	—	A	Pennsylvania anticipates establishing a program to better establish the species' status, and to monitor and manage its harvest pending express legislative authority in 1978.
				Rare in Western Pennsylvania 49/	--		
				Rare in Perry County, Pennsylvania 50/	FO		
				Rare in Southeastern Pennsylvania 51/	--		
				Not Endangered or Threatened 52/	Because of harvest technique		
				Decreasing 53/	--		
				Decreasing in Northampton County, Pennsylvania 54/	--		
				Stable or Increasing	CC		

Date: June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Pennsylvania	N			3,685	Stable [44]		NEA	State comments for 1979 not yet received.
					Rare in western Pennsylvania [45]			
					Rare in Perry County, Pennsylvania [46]	FO		
					Rare in southeastern Pennsylvania [47]			
					Not endangered or threatened [48]	Because of harvest technique.		
					Decreasing [49]			
					Decreasing in Northhampton County, Pennsylvania [50]			
					Stable, or increasing	CC		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Pennsylvania	N			3,665	Stable [45]		NF	The Pennsylvania Department of Environmental Resources believes that American ginseng is not endangered or threatened, but is vulnerable to uncontrolled harvest. The Department expects authority to manage the species in 1979.
					Rare in western Pennsylvania [46]			
					Rare in Perry county, Pennsylvania [47]	FO		
					Rare in southeastern Pennsylvania [48]			
					Not endangered or threatened [49]	Because of harvest technique		
					Decreasing [50]			
					Decreasing in Northhampton County, Pennsylvania [51]			
					Stable or increasing	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Pennsylvania (NF)	State estimates excess of 2,000,000 acres of suitable ginseng habitat, and is considered stable. State reports ginseng is uncommon, but not rare, in 43 of 67 counties. Populations are reported as "probably stable."	SD	State has no information concerning collection pressure. The fall is the traditional collection season. Seeds are planted after root harvest.	Dept. of Environmental Resources & the Bureau of Forestry prohibit digging of ginseng on State lands. Both of these agencies have the management authority (assigned by the Government). No management funding.	NEA

State Rhode Island ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Rhode Island.

Dr. Irene H. Stuckey, University of Rhode Island, stated orally that although there are herbarium records of American ginseng in Rhode Island, she considers the plant possibly extinct in the State (see also 61).

Finding. Negative.

July 7, 1978

AMERICAN GINSENG

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Rhode Island	U	--	--	Probably extirpated[55/]	Unpublished literature & FO	--	--

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Rhode Island	N				Probably extirpated ??	Unpublished literature and FO.	NEA	State comments for 1979 not yet received.

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Rhode Island	N				Possibly extirpated[52]	Unpublished literature and FO.	NEA	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Rhode Island (NEA)					NEA

State South Carolina

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in South Carolina.

In Wigginton (see 40), John Droyton of South Carolina is cited as saying in 1798: "It (American ginseng) is so much sought after by the Cherokees for trade it is by no means as plentiful as it used to be in this State." Radford et al. (see 129) noted that the plant was rare in the mountains and lower piedmont of two counties in South Carolina.

In a letter to the U.S. Fish and Wildlife Service (see 152), Kenneth B. Stansell, South Carolina Wildlife and Marine Resources Department, commented that the higher plant committee of a recent symposium on endangered species, which was sponsored by Mr. Stansell's Department, designated American ginseng as threatened in South Carolina. Mr. Stansell added "this represents a consensus of opinion from extremely knowledgeable individuals in the plant field."

Dr. J. A. Timmerman, South Carolina Wildlife and Marine Resources Department, stated orally that he did not think there was much commercial activity in American ginseng in South Carolina. The MA has forwarded to the ESSA three permit applications for international export of wild American ginseng collected in the State.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	How Determined	Findings	Comments
South Carolina	U	--	--	Threatened[56/]	B	NEA	Considered a minor ginseng producing State.
				Endangered[57/]	FO		
				Endangered[58/]	--		
				Decreasing and Threatened[59/]	FO		

June 1, 1979

State	Classification	Harvest: Reported 1978 lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs)	State population—estimates of abundance or status	How determined	Findings	Comments
South Carolina	N				Threatened [60]	B	NEA	The State has no programs to conserve wild plants.
					Endangered [61]	FO		
					Endangered [62]			
					Decreasing and threatened [63]	FO		

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
South Carolina	N				Threatened[53]	B	NF	The State has no program to conserve wild plants.
					Endangered[54]	FO		
					Endangered[55]			
					Decreasing and Threatened[56]	FO		

State South Carolina, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
South Carolina (NF)					NEA

State South Dakota

Date: August 30, 1977

AMERICAN GINSENG

Discussion. The ESSA has no information that American ginseng occurs in South Dakota.

Finding. Negative.

State Tennessee ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Tennessee.

In 1887, Gattinger (see 153, also 154) noted that American ginseng occurred "over the State but everywhere rare." Delcourt and Delcourt (see 46) noted herbarium records for 25 counties in Tennessee. Sharp (see 155) included American ginseng in "Rare Plants of Tennessee"; U.S.D.A. Soil Conservation Service included the plant in "Rare, Threatened, or Endangered Plant Species of Tennessee" (as rare) in 1975 (see 61); and Collins et al. (see 156) included the plant as threatened in "The Rare Vascular Plants of Tennessee."

Dr. Robert Kral, Vanderbilt University, stated orally that American ginseng is no longer found in many of the areas where it has occurred or should occur in central Tennessee. He further noted that it is probably more common in eastern and western Tennessee.

The MA has forwarded to the ESSA four permit applications for international export of wild American ginseng collected in Tennessee. Wigginton (see 40) also noted that the State was a commercial source.

Bogue (see 133) quoted one individual who said that American ginseng was stolen from Great Smokey National Park where the plant was plentiful. Dr. Susan Bratton, National Park Service, stated orally that poachers are a current problem in the Park and that the plant does not occur in much of the habitat that appears suitable.

Some sections of Tennessee may be capable of supporting a sustained harvest of American ginseng. However, the State has neither management programs nor regulating mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Tennessee	U	--	--	Rare 60/	--	NEA	State anticipates developing a management program.
				Rare 17/	--		
				Threatened 61/	HR & B		
				Decreasing 62/	HR & FO		
				Stable, or Increasing, or Decreasing	CC		
				Threatened 63/	B, and other individuals familiar with the plant.		

September 1, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Tennessee	C	--	--	Rare 60/	--	A	The State has initiated a program to better establish the species' status and to monitor the harvest pending express legislative authority in 1979.
				Rare 17/	--		
				Threatened 61/	HR & B		
				Decreasing 62/	HR & FO		
				Stable, or Increasing, or Decreasing	CC		
				Threatened 63/	B, and other individuals familiar with the plant.		

Date: June 1, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Tennessee	C			5,057	Rare [56]		NEA	State comments for 1979 not yet received
					Rare [57]			
					Threatened [58]	HR and B		
					Decreasing [59]	HR and FO		
					Threatened [60]	B, and other individuals familiar with the plant.		
					Stable, or increasing, or decreasing.	CC		

August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Tennessee	C	5,406	WR	7,002	Rare[57]		A	The Tennessee Department of Conservation has initiated a program to monitor the harvest through voluntary dealer surveys and to control exploitation by promoting a voluntary season and proper harvest techniques. In addition, the Department is funding research to better establish the species' status in the wild.
					Rare[18]			
					Threatened[58]	HR and B		
					Decreasing[59]	HR and FO		
					Threatened[60]	B and other individuals familiar with the plant.		
					Stable or increasing or decreasing	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Tennessee (A)	State reports indicate 93 of 95 counties harvest ginseng. Research assessing distribution, abundance and population status has been initiated.	SC	Harvest season takes place after 8/15, to allow for seed maturation. Collectors say ginseng is increasing in abundance.	Dept. of Conservation. Harvest methods are publicized through the media to encourage conservation. Ginseng program is voluntary.	A

State Vermont

ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Vermont.

In 1900, Brainerd et al. (see 158, also 25 and 159) noted that although American ginseng was "formerly common," it was then "rapidly disappearing." In 1967, Seymour (see 160) expressed a similar opinion regarding collectors as the primary reason for the decline. He further noted that the plant occurred in seven counties.

Brian Stone, Vermont Department of Forests, Parks and Recreation, after consulting with several botanists familiar with the State's flora, stated orally that American ginseng could be considered a marginally threatened species in Vermont. The plant appears to be neither rare nor common and collecting pressure is apparently light. Designation as a threatened species would primarily be justified by the potential threat of additional collecting pressure as there is substantial habitat available. One botanist told Stone the plant is probably increasing. Opinions differed as to whether the primary collectors were those that had collected the roots for years or individuals who had become recently interested in the alleged medicinal values of the plant.

Vermont requires written permission from private landowners or authorized agents for public lands before more than one individual plant or two cuttings of protected species can be removed. American ginseng is not included in the list of protected plants.

Some sections of Vermont may be capable of supporting a sustained harvest of American ginseng. However, the State has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
Vermont	U	--	--	Decreasing 64/	--	NEA	No anticipated management program. Not included in a State list of protected plants.

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Vermont	N				Decreasing **		NEA	State comments for 1979 not yet received

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Vermont	N				Decreasing 61		NF	State comments for 1979 not received.

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Vermont (NF)	No program	—			NEA

State Virginia ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Virginia.

Massey (see 161) noted that American ginseng occurred in 13 counties in Virginia, and Harvill (see 162) noted the plant was local in the piedmont in 4 counties.

American ginseng was included as a depleted species in the list "Endangered Status of Virginia Flowering Plants," developed by Dr. Leonard V. Uttal, Virginia Polytechnic Institute and State University in 1972 (see 61).

The MA has forwarded to the ESSA seven applications for international export of wild American ginseng collected from Virginia.

In addition, Virginia has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	State Population How Determined	Findings	Comments
Virginia	U	--	--	"endangered in only a few localities if at all" 65/	B	NEA	The State anticipates developing a management program.
				Endangered 66/	--		
				Endangered 67/	--		
				Stable	CC		

September 1, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	State Population How Determined	Findings	Comments
Virginia	C	20,663 lbs. 10 oz.	SD	"endangered in only a few localities if at all" 65/	B	A	The State has initiated a program to better establish the species' status and to monitor the harvest pending express legislative authority in 1979.
				Endangered 66/	--		
				Endangered 67/	--		
				Stable	CC		

State Virginia, page 2 ICAC Summary, GINSENG

Date: June 1, 1979

State	Classification	Harvest Reported 1978 lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Virginia	M	5,512	SED	8,152	"Endangered in only a few localities if at all" [1]	B	NEA	Additional information being sought from the State
					Endangered [2]			
					Endangered [3]			
					Stable	CC		

August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Virginia	M	5,512	SED	8,674	"Endangered in only a few localities if at all."[62]		A	The Virginia Department of Agriculture and Consumer Services has established a program to better establish the species' status in the wild and to monitor and manage its harvest.
					Endangered[63]			
					Endangered[64]			
					Stable	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Virginia (A)	Reported from 7 counties. Most common in the Jefferson National Forest. Research has been initiated to assess distribution.	SD	Harvest season 8/15-12/31.	Protection given to ginseng under the Endangered Species Plant Act. Dept. of Agriculture and Consumer Service have initiated program to assess ginseng status.	A

State West Virginia ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in West Virginia.

In 1950, Core (see 163) noted that American ginseng was found throughout West Virginia, but that it was "becoming rare." Straughsbaugh and Core (see 164) concurred and added that the decline was due to collectors.

In a letter to the U.S. Fish and Wildlife Service, Dr. Dale E. Pike (see 165), West Virginia Department of Natural Resources, supplied information that American ginseng occurred in 23 counties, based on herbarium records, the literature, and sightings. He also commented:

> Undoubtedly ginseng is much more widespread in West Virginia than the records we have indicate. It is our feeling that the species could become very rare in the state, if not completely extirpated in some localities because of commercial collecting. It may be of interest that a check of our morning paper's classified section contained an advertisement offering $72 a pound for ginseng. We have no idea of how many persons in the State deal in this product—certainly there are several around the state.

Core (see 166) included American ginseng in "Rare and Endangered Plant Species in West Virginia": "rare in most sections because of digging of the roots • • • It was probably found in every county in this State at one time."

The MA has forwarded to the ESSA eight permit applications for international export of wild American ginseng collected in West Virginia. Wigginton (see 40) also noted that West Virginia is a commercial source.

West Virginia law requires written permission from landowners or appropriate agents before any plants can be damaged or collected within 100 yards of any public road, or possessed or transported on public roads in the State. (Acts of West Virginia 11th session 1872–73 Chap 158 also requires the consent of landowners in Pocahontas, Greenbrier and Webster Counties before ginseng or other medical roots can be collected on their land.)

Although West Virginia may be capable of supporting a sustained yield of American ginseng, the data are inadequate to assess the status of the species in the State.

In addition, West Virginia has neither management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest: Reported Harvest/ 1977	Harvest: How Reported	State Population: Estimates of Abundance or Status	State Population: How Determined	Findings	Comments
West Virginia	R	16,149 lbs., dry 1,073 lbs., green +3,164 lbs.	DS, other sources	Rare to Frequent in occurence in different counties, not Endangered[68] Fairly Common[69] Stable or Increasing	B — CC	A	Harvest increased from 1976. The State has initiated a program to monitor and manage the harvest.

June 1, 1979

State	Classification	Harvest: Reported 1978 (lbs.)	Harvest: How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
West Virginia	M			11,132	Rare to frequent in occurence in different codsunties, not endangered [illegible]. Fairly common [illegible] Stable or increasing	B CC	NEA	State comments for 1979 not yet received

August 15, 1979

State	Classification	Harvest: Reported 1978 lbs.	Harvest: How Reported	Reported 9/1/78 to 8/2/79 (lbs)	estimates of abundance or status	How Determined	Findings	Comments
West Virginia	M	10,110	MDR	12,644	Rare to frequent in occurence in different counties, not endangered[66] Fairly common.[66] Stable or increasing	CC	A	The West Virginia Department of Natural Resources has established a program to monitor the harvest and to control exploitation, and anticipates initiating field surveys and population studies to better establish the species' status in the wild.

State West Virginia, page 2 ICAC Summary, GINSENG

Date: September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
West Virginia (A)	State harvest reports ginseng taken in 55 counties.	SD, CR	Harvest season 8/1 to 11/15. Mandatory records of harvest are supplied by the dealers. Harvest increased 48% from previous season.	Harvest is regulated by State law. Dept. of Natural Resources is the Management Authority. Dealers are required to tag or certify all ginseng purchased at State tagging station. Biological research has been initiated.	A

State Wisconsin ICAC Summary, GINSENG

Date: August 30, 1977

AMERICAN GINSENG

Literature Review and Discussion. The data available to the ESSA are insufficient to support a positive finding for international export of American ginseng collected in Wisconsin.

In 1938, Fassett (see 173) noted that American ginseng was becoming rare in Wisconsin. (For references concerning the occurrence of the plant in Wisconsin in the 19th century, see 174 and 175.)

American ginseng is listed as a threatened species in "Endangered and Threatened Vascular Plants in Wisconsin" (see 176).

In a memorandum to Ron Nicotera, Wisconsin Department of Natural Resources (see 177), Robert H. Read, Wisconsin Department of Natural Resources, commented that although American ginseng is rare in Wisconsin, he knew of a few places, all on public land, where it was somewhat common. He expressed concern about the threat of collecting, but did not know if there were enough plants in the State to make collecting economically worthwhile.

The MA has forwarded to the ESSA three permit applications for international export of wild American ginseng collected in Wisconsin.

Destruction or removal of certain plants from private or public lands is prohibited by Wisconsin law unless written permission is obtained from the landowner or appropriate agent. American ginseng is not one of the protected plants. However, Wisconsin (94.36) has established a collecting season from August 1 to January 1.

Some sections of Wisconsin may be capable of supporting a sustained harvest of American ginseng. However, the State does not have adequate management programs nor regulatory mechanisms to promote the conservation of American ginseng and to regulate a harvest.

Finding. Negative.

July 7, 1978

State	Classification	Harvest reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
Wisconsin	R	--	--	Threatened 70/	HR, LS & FO	NEA	The State has initiated a program to better establish the species' status.
				Rare 71/	--		
				Stable	CC		

September 1, 1978

State	Classification	Harvest Reported Harvest/ 1977	Harvest How Reported	State Population Estimates of Abundance or Status	How Determined	Findings	Comments
Wisconsin	R	--	--	Threatened 70/	HR, LS & FO	A	The State has initiated a program to better establish the species' status, and to monitor and manage its harvest.
				Rare 71/	--		
				Stable	CC		

June 1, 1979

State	Classification	Harvest Reported 1978 (lbs.)	Harvest How reported	Export reported 9/1/78 to 4/15/79 (lbs.)	State population—estimates of abundance or status	How determined	Findings	Comments
Wisconsin	M	2,404 VDR		7,363	Threatened 66/	HR, LS and FO A.		The Wisconsin Department of Natural Resources is supporting research to better establish the species' status and has implemented a program to monitor and manage the harvest. Additional regulatory authority is expected in 1979.
					Declined, but "still occurs in harvestable quantity" 67/			
					Rare 68/	CC		
					Decline, in population size. Population consists of younger plants 69/			
					Stable	CC		

State Wisconsin, page 2 ICAC Summary GINSENG

Date: August 15, 1979

State	Classification	Harvest Reported 1978 lbs.	Harvest How Reported	Export Reported 9/1/78 to 8/2/79 (lbs)	State population estimates of abundance or status	How Determined	Findings	Comments
Wisconsin	N	2,404	VOR	7,363	Threatened[67]	AR,LS and FO	A-	The Wisconsin Department of Natural Resources has established a program to better establish the species' status in the wild and to monitor and manage its harvest. Additional regulatory authority is expected in 1979.
					Declined but "still occurs in harvestable quantity"[16]			
					Rare[68]			
					Decline in population size. Population consists of younger plants[69]	CC		
					Stable	CC		

September 29, 1980

State 1979 Export Finding	Distribution and Abundance	How Determined	Harvest Practices	Management Authority and Management Practices	Proposed 1980 Export Finding
Wisconsin (A)	Currently under assessment.	CO	Harvest season 8/15 to 11/1.	As of July 1, 1980, State has authority to regulate ginseng harvest from the wild. Dept. of Natural Resources and the Fish and Game Department protect ginseng during the closed season. Much of the program is voluntary by harvesters and dealers.	A